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EXPERIMENTAL STUDY OF THE FORMATION OF STUDENTS' INTEREST IN THE LEARNING PROCESS

Abstract. The article reveals the course and results of an experiment aimed at developing effective ways of successfully forming interest among students of general secondary education institutions in the learning process. The experimental base of the study was the Sumy specialized school of I-III degrees No. 15, where the experiment took place in natural conditions, without violating the logic and sequence of the curriculum of the discipline, during the 2022-2024 academic year. The practical significance of the obtained results of the study consisted in the identification of ways of organizing the dynamic process of forming cognitive interest in students of special education. Experimental research was conducted at the ascertainment, formative and control stages. At the ascertainment stage, the methods of survey, questionnaire, conversation, observation, analysis and generalization of the results. The content of the formative stage consisted of the stages of the work carried out, namely: creation of conditions for the emergence of students' cognitive interest in the learning process.

Among the methods of forming the actual cognitive competence of schoolchildren, the study used the adoption of an attractive goal, group and pair work, interactive methods, in particular brainstorming, game-based learning activities were actively implemented, success situations were created, and a large amount of visualization and handouts were used. Stimulation of schoolchildren's work was carried out both during school hours and outside of school hours through the organization of non-traditional forms of education, in particular quiz lessons and interactive lessons. The work carried out contributed to the fixation at the control stage of the experiment of quantitative and qualitative indicators of increasing the level of interest in learning.

Key words: cognitive competency, cognitive interest, motivation, schoolchildren, pedagogical experiment.

1. Introduction

Statement of the problem. Today, the issue of developing an interest in science has become relevant due to the significant changes taking place in society and education, which are largely determined by the peculiarities of the transition to the information society. These changes in the educational process require the search for new forms, methods and techniques of teaching that increase motivation to learn and engage students in active learning and cognitive activities. All of this reflects the urgency of the problem of increasing motivation to learn and developing students' cognitive interest in the current structure of the educational process. The long-term reform of Ukrainian school education aims to radically change its content. These changes have raised the question of the final result of preparing students for social practice and adaptation to the labour market, for successful entry into independent life and self-realisation in it. Today, geographical education, based on scientific knowledge, worldview and human needs, is designed to prepare graduates for all types of independent activities in a diverse geographical reality.

The role of the teacher is changing significantly and even growing. Teachers have to master the art of organising students' active cognitive activity in the classroom, which is much more interesting and at the same time more difficult than simply imparting knowledge and controlling its acquisition.

Analysis of recent research and publications. The problem of a competence-based approach to teaching is reflected in the works of such domestic and foreign researchers as I. Bekh,

N. Bibik, V. Bondar, L. Vashchenko, O. Kryvonos, N. Morse, O. Ovcharuk, O. Savchenko, V. Kraevsky, J. Raven, G. Selevko, and others. The works of L. Vishnikina, T. Hilberg, L. Zelenska, A. Pokas, V. Samoilenko, O. Topuzov, H. Uvarova, V. Yatsenko and others were devoted to the coverage of various aspects of competence-based teaching of geography. Practitioners I. Zhuravel, V. Kost, M. Pozniakova, P. Skavronskyi, N. Fidria, N. Cherniavska and others have covered practical aspects of forming students' geographical competence. However, there is an urgent need for theoretical and applied research aimed at substantiating the structure and content of students' subject competence.

2. Research results

Presentation of the main research materials. The ascertaining stage of the experiment was aimed at identifying the psychological aspects and motivation of secondary school students, as well as clarifying the role of the teacher in the formation of geographical interest.

Research objectives:

1. To analyse and select methodological psychological and pedagogical literature for the selection of diagnostic tasks for the ascertaining experiment.
2. To identify and describe the psychological characteristics of secondary school students.
3. To determine the role of the teacher in the formation of students' geographical interest during learning.
4. To develop practical recommendations for increasing students' geographical interest in the learning process, taking into account psychological aspects and the role of the teacher.

The survey was conducted among secondary school students in their free time, online, using the Google forms electronic platform. The survey was conducted with the informed consent of the parents of all study participants.

To obtain demographic data, as well as to identify additional factors influencing the geographical interest of students, the author's questionnaire was developed.

The Eysenck Personality Inventory (EPI).

This personality questionnaire is designed to diagnose and study individual psychological characteristics and characteristic manifestations.

The Oxford Dictionary defines temperament as a person's character, which is manifested in the way they behave or react to people or situations. While this definition is true, it is somewhat limiting. Temperament also includes innate behavioural and personality traits. It is a natural predisposition that often manifests itself in everyday interactions. Temperament even determines how the mind works. Over the years, scientists have identified four main types of temperament that a person can belong to. There is no precise scientific explanation, and some people identify with more than one type of temperament. Your temperament is believed to be innate, largely influenced by genetics. It is not uncommon for people to have a temperament similar to that of their parents and grandparents. Studies show that 20 to 60% of temperament is determined by genetics. Environmental factors, such as negative and positive childhood experiences, can also shape temperament. For example, a person who grew up in an abusive family may become melancholic. With age and the acquisition of new life experiences, personality is likely to change faster than temperament. It is not unusual for an introverted child to become an extroverted adult. In fact, studies have shown trends in personality traits throughout life. For example, in the United States, neuroticism and extraversion decrease throughout life, agreeableness increases throughout life, and conscientiousness increases until middle age and then decreases later in life. Given that temperament is a property of the nervous system, temperament affects all learning and English language learning in particular.

A sanguine person has a strong, balanced and mobile nervous system. The characteristic features of this type are energy and stubbornness in achieving goals (sufficient strength of nervous processes), self-control (sufficient balance of nervous processes) and, at the same time, a high degree of mobility of nervous processes, which is expressed in the ability to quickly change habits and preferences according to circumstances.

A phlegmatic person has a strong, balanced, but inert nervous system. People of this type are mostly characterised by slowness. In addition to energy and high efficiency (sufficient strength of nervous processes), the ability to maintain self-control and self-control (good balance of nervous processes), they show a certain conservatism in behaviour, which indicates inertia (weak mobility) of nervous processes.

Cholerics have a strong but unbalanced nervous system. They are enthusiastic about their work, passionate about their business, but often any little thing can put them out of action, which indicates an imbalance in the nervous system, where enthusiasm dominates.

Melancholic people are characterised by a general weakness of the nervous system, lack of such qualities as balance and mobility of nervous processes. This type is characterised by the rapid onset of excessive inhibition even in response to moderate stimuli. In humans, the characteristics of this type are manifested primarily in indecision and inability to insist on their ideas. A melancholic easily obeys the will of others, panics in unusual circumstances, considers life very difficult, full of insurmountable difficulties (weakness of nervous processes). These people seek to isolate themselves from life with their emotions, avoid social life and are afraid of any responsibility.

Our study uses the adolescent version of the test. The test consists of 55 questions with which the respondent agrees or disagrees (Appendix B).

The Eysenck Circle is based on axes. The first defining criterion is bipolar and depends entirely on the psychological components of the person. The extreme points of the axes show the orientation of rewards towards the outside world, which is a sign of extroversion, or towards internal experiences, which is typical for introverts.

Sociability, openness, cheerfulness, and carefree spirit are considered to be the main characteristics of extroverts. Introverts, on the contrary, are characterised by closeness, aloofness, focus on their own affairs, and calmness. At the same time, in the sectors between the scales, there are temperament types:

- neuroticism and introversion are manifested in melancholic people. Such people are endowed with prudence, caution and calmness. They are peaceful and friendly towards people. At the same time, they are characterised by passivity.
- Neuroticism and extraversion define cholerics. This type of temperament makes people active. Cholerics are sensitive and easily excitable. At the same time, they can be fickle and changeable. These people have an optimistic outlook on life.
- Stability and introversion are characteristic of phlegmatic people. They are almost always reserved, calm and reasonable. At the same time, they can be easily upset.
- stability combined with extraversion is characteristic of sanguine people. They are cheerful and carefree. It is easy to establish relationships with them, as they are talkative, sociable and responsive.

The Rean Motivation Test is used to determine which vector prevails in a person: achieving success or avoiding failure.

Motivation is a set of personal factors that are not always consciously understood, but which stimulate human activity and determine the direction of actions. Motivation plays a key role in encouraging a person to perform any actions, the goals of which depend on various circumstances, including psychological and mental aspects.

The terms «motivation» and «motivational orientation» are widely used in psychology to study the causes and mechanisms of purposeful activity. Motivational orientation is associated with such personal qualities as the desire to take initiative and persistence in solving tasks.

Here's a test for motivation to succeed or fear of failure. Answer the questions quickly, without hesitation. The answer that comes to mind first is usually the most correct. From 1 to 7 points Motivation to fail (fear of failure) has been diagnosed. People with failure motivation are usually characterised by increased anxiety and self-doubt. They try to avoid responsible tasks, and when faced with tasks of extreme responsibility, they can fall into a state of near panic. At a minimum, situational anxiety is extremely high in such cases. However, this can be combined with

a very responsible attitude. From 8 to 13 points The motivational pole is not expressed. Note that a score of 8 or 9 indicates a tendency to be motivated by failure, while a score of 12 or 13 indicates a tendency to be motivated by success. From 14 to 20 points, success motivation (hope for success) is diagnosed. Success motivation is a type of positive motivation. With this motivation, a person who starts an activity has in mind the achievement of something constructive and positive. The hope for success and the need to achieve success are at the heart of a person's activity. Such people are usually self-confident, purposeful, responsible, proactive and active. They are characterised and determination by persistence in achieving their goals.

The author's questionnaire was developed to determine not only the main demographic indicators but also additional factors that influence the formation of geographical interest of secondary school students.

The study involved 30 6th-grade pupils studying at Sumy Secondary School No. 15 of the City Council. The age of the study participants was 11-13 years old, with an average age of 12.2 years. The study was conducted with the informed consent of the parents.

The study involved 15 boys (50%) and 15 girls (50%).

It was found that 70% of 6th-grade pupils have a fairly high geographical interest. It was found that 50% of students study only for the sake of a good grade, 30% believe that the knowledge gained in geography lessons can be used in everyday life, and 20% of secondary school students believe that they do not need such knowledge at all. 40% of students believe that a geography teacher is able to interest them, another 40% believe that the teacher just asks a lot of questions, and 20% of students believe that the teacher gives only the information that they can read in the textbook. It has been determined that 30% of students believe that lessons can become more interesting if heuristic teaching methods are used, and another 30% of students are sure that the teacher will not conduct lessons. It was found that the majority of secondary school students like creating and presenting presentations both on the topics of the lesson and on additional topics. According to 77 % of students, the use of modern technologies and gadgets in the classroom can increase their interest, 40 % believe that this requires a change of teacher, 20 % of sixth-graders who took part in the study believe that more interesting tasks are needed, and 20 % are convinced that their geographical interest cannot be increased.

Thus, it can be concluded that the teacher and the methods of teaching play a significant role in shaping students' geographical interest in learning. Particular attention should be paid by the teacher, class teacher and school psychologist to the 6 pupils who show no interest in the subject.

In the course of the study to determine the type of temperament, we relied on the signs that were most pronounced in the respondents and did not take into account the «transitional» types. The results of the survey are presented in Table 1.

Table 1.

Temperament types of research participants

Temperament types	Number of students
Choleric	9 (30%)
Sanguine	9 (30%)
Phlegmatic	7 (23%)
Melancholic	5 (17%)

So, as you can see, 30% of sanguine, 30% of choleric, 23% of phlegmatic and 17% of melancholic people took part in the study.

Traits of extraversion and introversion are a central dimension in some theories of human personality. The terms 'introversion' and 'extraversion' were introduced to psychology by Carl Jung, although popular understanding and modern psychological usage differ. Extraversion is typically manifested in open, talkative, energetic behaviour, while introversion is more reflective

and reserved. Jung defined introversion as ‘a type of attitude characterised by orientation in life through subjective mental content’ and extraversion as ‘a type of attitude characterised by concentration of interest on an external object’. Extraversion and introversion are usually seen as a single continuum, so to be higher in one of them, you need to be lower in the other. Jung offers a different perspective and suggests that each person has both an extroverted and an introverted side, with one being more dominant than the other. Almost all comprehensive personality models include these concepts in various forms. In a correlation analysis between introversion-extraversion and motivation in learning, it was found that with an increase in extraversion, the motivation to succeed increases, and, accordingly, introversion causes motivation to avoid failure.

Neuroticism is a personality trait, not a mental health condition. It is defined as a tendency to have easily aroused, sometimes uncontrollable, negative emotions that do not interfere with daily functioning. For example, if a person lives with neuroticism, they may find that their emotions are easily stimulated and when they are at their peak, they may have difficulty calming down. Like all personality traits, neuroticism exists on a continuum. It is not a one-time manifestation of unstable emotions. The extent to which a person expresses neuroticism on the continuum is part of what defines this personality trait for them and distinguishes them from someone else who also has neurotic behaviour. Correlational analysis has shown that neuroticism is inversely correlated with motivation to succeed. Thus, it can be said that sanguine temperament holders, as extroverts with low neuroticism, are more likely to be motivated to succeed. Melancholics, as introverts with high neuroticism, have a learning motivation that is aimed at avoiding failure. Phlegmatic introverts with low neuroticism and choleric extroverts with high neuroticism have a mixed (or neutral) motivation to learn.

The test results are presented in Table 2.

Table 2

Motivation in the study of research participants

Motivation in the study	Number of students
Avoiding failure	12 (40%)
Neutral	9 (30%)
Achieving success	9 (30%)

As you can see, 40% of secondary school students try to avoid failure in their studies, 30% are neutrally motivated (depending on the situation) and 30% of students are focused on achieving success.

When working with sanguine students, it is necessary to give them an outlet for their energy, to encourage them to develop their potential and skills in socially useful work. It is necessary to show trust in an optimistic person, support their useful initiatives, provide moral support for their efforts and strengthen their faith in their own abilities to overcome difficulties. You should not assign them tasks that involve monotonous, long-term activities. You need to take into account their personal interests, inclinations, needs and difficulties, as well as their temporary nature. The best way to help a person who is prone to discomfort is to provide open and friendly support and advice. It is advisable to use their leadership skills in a group, involving them in organising parties, discussions and other socially useful activities. Sanguine people try to do only easy, pleasant and interesting things, avoiding difficult, unpleasant and indifferent ones. That is why it is necessary to develop in them a constant interest, patience, determination, the habit of continuing and conscientiously bringing the work started to the end, getting to the bottom of each topic. Compromise, optimism, cheerfulness and sociability of a sanguine person, if not properly nurtured and controlled, can become a source of such negative character traits as frivolity, carelessness, volatility and selfishness.

When teaching a choleric person, it is necessary to show an interested understanding of the student's state of mind. Tactfully and indirectly prevent a 'breakdown'; take into account the motives of actions, engage in active activities related to the manifestation of initiative. Avoid sharp emotional reactions directed at the student. It is better to influence a choleric person indirectly through a group. It is worth remembering that useful work can make a choleric develop positive personality traits and ward off negative influences. Choleric need help and compassion in case of complications.

Their tirelessness, energy, risk-taking, stubbornness, anger, impatience, and high conflict can lead to breaking dishes, quarrels with peers, injuries, etc. It is important to raise a choleric person to be kind, compassionate and attentive, as this type of person is very prone to aggression. Use interesting activities to gradually develop perseverance, perseverance, conscientiousness, accuracy and precision in performing tasks. To prevent choleric from interfering with other students in the classroom when they finish their work, the teacher should always have an interesting additional task for them, but it should be offered only if the student has done the main work well.

When working with a phlegmatic person, it is necessary to give detailed instructions (what? when? in what order?) for each task to be performed. It is advisable to encourage the expression of honest feelings. Involve them in interesting activities that develop feelings and emotions and increase self-confidence. Trust the students, give them the opportunity to realise themselves in activities that can help others. Avoid demonstration tasks that require a high pace of work. The wrong approach to organising a phlegmatic's education is to accuse them of stupidity and lack of intelligence and constantly punish them for their slowness. The consequences of such an attitude are often tragic: a person develops a neurosis, begins to perform tasks in a hurry and in bad faith, and develops an inferiority complex due to constant failures. As a result, a person does not reveal himself or herself as a person, does not realise his or her creative capabilities of thinking, emotions and imagination. Suppose a phlegmatic person's education is favourable and they manage to develop while retaining all the positive traits of their temperament. In that case, society receives conscientious, serious, consistent, passionate people – often excellent scientists. Phlegmatic people are not characterised by strong emotional expressions, so they are often considered indifferent and thick-skinned. In fact, their emotions are deep and stable. Phlegmatic people suffer from injustice, violation of their rights, separation from loved ones, fear and aversion to change and instability. They can completely ignore the demands of an unauthorised person. Therefore, when communicating with phlegmatic people, teachers should weigh every word and action to avoid losing credibility in the children's eyes and try to establish full mutual trust in relationships so that the person does not withdraw into himself.

Melancholic people need to be taught with care, attention and kindness. The main characteristics of these people are fear, indecision and seeing events in a gloomy light. These personal qualities cannot be eradicated. Punishment and constant manifestations of resentment from others only deepen them, disturbing the extremely sensitive nervous system of melancholic people. The right educational approach requires compassion and full understanding of the student's feelings. It is necessary to penetrate subtly, deeply and with interest into the mental world, to provide moral support and strengthen self-confidence, to show understanding of the mental state of a person. From time to time, it is necessary to alternate the experiences of the melancholic with the experiences of the group (team). Develop willpower, perseverance and self-esteem in the group. It is necessary to organise a 'state of success' after a certain period of time. Carefully observing the mood and interests of the melancholic, it is necessary to encourage his participation in clubs, courses, etc., taking into account his intentions, habits and difficulties. Melancholic people are often shy. Teachers should never, and especially in this case, be guided by the reaction of others ('What will they say? What will they think?'), but only by the student's psychological state. By shaming and punishing a melancholic, you can develop their shyness to the point of mental illness. Shy people can absorb new information quickly or slowly, depending on the circumstances. In a calm and pleasant environment, new information is absorbed quickly and retained for a long period of time. Therefore, creating favourable conditions for learning is the main issue when working with a melancholic.

Motivation can only be created through engaged learning, in which the teacher and students are partners in communication. Engaged learning occurs when the age and psychological characteristics of students of specialised secondary education are considered. After all, each age group has its own type of leading activity. According to modern age psychology, for adolescents aged 11-13, cognitive and social activities are the leading ones.

Considering the results of the student survey, to improve the formation of geographical interest among secondary school students, it is necessary to introduce more heuristic teaching methods and use modern gadgets and interactive technologies in educational activities.

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ЕКСПЕРИМЕНТАЛЬНЕ ДОСЛІДЖЕННЯ ФОРМУВАННЯ ІНТЕРЕСУ УЧНІВ У ПРОЦЕСІ НАВЧАННЯ

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Анотація. У статті розкриваються хід і результати експерименту, спрямованого на розроблення ефективних шляхів успішного формування інтересу в учнів закладів загальної середньої освіти у процесі навчання. Експериментальною базою дослідження була Сумська спеціалізована школа І–ІІІ ступенів № 15, де експеримент проходив у природних умовах, не порушуючи логіки й послідовності програмного викладу дисципліни, упродовж 2022–2024 навчального року. Практична значущість отриманих результатів дослідження полягала у виявленні способів організації динамічного процесу формування пізнавального інтересу в учнів ЗЗСО. Експериментальне дослідження проводилося на констатувальному, формувальному та контрольному етапах. На констатувальному етапі методами опитування, анкетування, бесіди, спостереження, аналізу й узагальнення результатів. Зміст формувального етапу становили етапи проведеної роботи, а саме: створення умов для виникнення пізнавального інтересу учнів у процесі навчання. Серед способів формування власне пізнавальної компетентності школярів у дослідженні використовувалися прийом привабливої мети, групова та парна робота, інтерактивні методи, зокрема мозковий штурм, активно впроваджувалася ігрова навчальна діяльність, створювалися

ситуації успіху, використовувалася велика кількість наочності й роздаткового матеріалу. Активізація роботи школярів здійснювалася як в урочний, так і в позаурочний час через організацію нетрадиційних форм навчання, зокрема уроків-вікторин та інтерактивних уроків. Проведена робота сприяла фіксації на контрольному етапі експерименту кількісних і якісних показників підвищення рівня інтересу до навчання.

Ключові слова: пізнавальна компетентність, пізнавальний інтерес, мотивація, школярі, педагогічний експеримент.

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