Linguistic and Philosophical Investigations
ISSN: 1841-2394, e-ISSN: 2471-0881
Vol 23 (1s) 2024
pp. 144 - 166

The Effectiveness of the Web Coast Strategy in Teaching Science on Achievement and the Development of Self-Learning Skills for Primary School Students in Asir Region

[1]Nawal Mohammed Ahmed Assiri, [2]Laila Mohamed Elwakeel

[1]Al Sadd - 8746 - Khamis Mushait 62431 - 3169

Nawal.asere3@gmail.com.

[2]Muhayil Asir, Applied College, King Khalid University,

Muhayil Asir 61913, Saudi Arabia

lalwakel@kku.edu.sa.

Abstract

The aim of the research is to identify the impact of teaching a proposed unit in health education using Web Quests on the achievement and development of self-learning skills among sixth grade students, and to achieve this goal both the descriptive approach was used in preparing the theoretical framework and analyzing the "first aid" unit in the family education course for the sixth grade of primary school issued by the Ministry of Education for the year 1441-1442 AH, and also in building The unit "Health Education and First Aid" proposed for the "First Aid" unit scheduled using Web Quests, in the preparation of the teacher's manual and research tools, and the experimental approach with a semi-experimental design with one set in pre- and post-application, to know the impact of teaching a unit in health education using Web QuestsOn the achievement and development of self-learning skills among sixth grade primary students, and the research was limited to a simple random sample that was selected according to the guidance of the Education Office from the sixth grade students in the twenty-seventh primary school in Khamis Mushait Governorate of the Asir region as an experimental group for this research, which numbered (70) students, applied to them before and after the two research tools represented by the achievement test in the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education course for the grade The results found statistically significant differences at the level of significance (0.05) between the averages of the scores of the experimental group students in both the pre- and post-application of the achievement test in health education and the self-learning skills scale, in favor of the post-application, and the results also found a significant impact of teaching a unit in health education using Web Quests On the achievement and self-learning skills of sixth grade students.

Keywords: Health education - Web Quests - achievement - self-learning skills.
Received:25May2024 **Revised:**07July 2024 **Accepted:**27July 2024

Introduction to research

Research Introduction:

The world today is witnessing health issues and problems that threaten the lives of human beings, whether developed or developing countries, which have become a global concern because they affect societies healthily, economically and scientifically, as the physical health of humans enables them to play their active role in progress, construction and increase production, and therefore health education among members of society is one of the most important things that educational institutions must focus on by developing curricula and directing them towards attention to health education to increase students' awareness of the importance of practicing healthy habits to maintain health private and public and solve their problems.

Many countries of the world have sought to educate their health personnel to reduce serious problems that are reflected in the general health of society, and therefore the Health Policy Framework 2020 has been adopted by all member states of the World Health Organization, in order to promote healthy growth through education, as this helps in health literacy, and positively affects the mental and physical health aspects and changes in health-supporting behavior such as following active and healthy lifestyles (World Health Organization, 2020), and accordingly, it is important to include in educational policies what aims at health education because of its importance in making students more able to use the right patterns and behaviors.

Accordingly, it can be said that it is important to include topics related to health education in the science curricula for the primary stage because this may contribute to increasing health awareness among students at this stage, which is reflected in their health practices, which in turn leads to reducing individual and social health problems, and to achieve this, various teaching methods and strategies should be employed that correspond to the characteristics of the age stage of students at this stage, and contribute to providing them with many healthy habits.

Since students in the primary stage have mental development characteristics that make them curious, characterized by the fertility of imagination, and characterized by many questions (Ministry of Education in the Kingdom of Saudi Arabia, 1438 AH), it is important to encourage them to participate in activities that arouse their desire to explore, think and investigate, and help them develop their various skills that benefit them in their future and educational lives, as this stage is the basis for all subsequent educational stages.

Since education in the current era has become dependent on the student's active role in learning, by providing him with the opportunity to participate in the success of the educational process in its modern concept and related to technology to obtain knowledge from various fields and scientific disciplines through electronic research and investigation (Olayan, 2019), this leads to the use of teaching methods based on electronic inquiry to train students to solve problems related to health education.

Many studies have confirmed the impact of using Web Quests in science teaching to improve many educational outcomes, including (Al-Juhani, 2016; Al-Zu'bi, 2017; Al-Juaid and Al-Juhani, 2018; Al-Shdeifat, 2018; Al-Qahtani, 2019), which indicated that Web Quests is one of the e-learning methods that help improve the teaching and learning process, as it combines tight educational planning on the one hand and the use of computers and the Internet on the other.

The fact that the nature of Web Quests allows the student to acquire knowledge from various educational sources in order to employ it in solving real, realistic and non-artificial problems related to what the student is studying, it can contribute to achieving the most important goals of health education, which is to raise the level of achievement in increasing the student's ability to remember the knowledge he has obtained about health education and employ it as previous experiences to practice healthy habits in daily life situations.

Many studies have confirmed the need to develop self-learning skills in science because of the importance of this in acquiring the cognitive, motor and emotional aspects of learning for students, including the study of each of (Al-Harbi, 2018; Afifi, Kashko, Afifi and Al-Mouji, 2016; Mohammed, 2016; Hindawi, 2017), and these studies indicated that the development of self-learning skills requires the provision of teaching methods that contribute to the development of these skills so that students become more able to solve their scientific and educational life problems themselves, in an accurate scientific manner, as the use of methods The usual teaching that relies on memorization and indoctrination, limits the development of these skills in an appropriate manner that is in line with the requirements of developing the student's skills and abilities to be more able to keep pace with contemporary developments.

Based on the above, the importance of health education for students in the primary stage is evident, which is based on the student's success in the subsequent educational stage, and therefore their training began from this age to learn healthy habits that have an impact on their behavior and healthy habits for life, and because this requires the use of effective educational methods that arouse students' interest and attract them to acquire knowledge and obtain information that expands their knowledge structure and increases their experiences and skills to be able to address their health problems according to experiences and foundations It was necessary to search for modern strategies that focus on the student's basic role in

learning and develop his self-skills in learning through exploration and scientific research, this required that the search for the use of Web Quests in teaching a proposed unit in health education and know the impact of this on achievement and the development of self-learning skills among sixth grade students.

Search problem:

Despite the Kingdom's interest in health education and the inclusion of its topics in educational curricula, including science, there is still a deficiency in including some health education requirements and concepts in science curricula in general and science curricula for the primary stage, as the results of the monthly study (2017) indicated the availability of the food health standard and the standard of prevention and diseases in the science curricula for the primary stage at a high rate, while the availability of the first aid standard at an average rate in these curricula, but it was found that there was a lack of inclusion of some other health education standards The study therefore recommended that the standards not addressed should be included and that the proposed health education standards should be balanced in all primary grades.

The importance of health education for students in the primary stage comes from the fact that this stage is the basic building block, and providing students with the correct healthy habits and behaviors at this stage has an impact on their future life, and despite the availability of some standards in the science curricula for this stage, the researcher found through her communication with teachers in the primary stage remotely that the students had unhealthy habits practiced in their eating of foods, personal hygiene and general hygiene, and the researcher conducted a remote exploratory study to identify On the extent of students' achievement of the concepts, fields and habits of health education in science, as it prepared an electronic test in health education, it became clear that there is a low level of achievement in health education among sixth grade students, and the researcher attributes this decline to the lack of use of teaching methods that attract students to learning, and arouse their desire to acquire knowledge, and the researcher conducted an exploratory study to know the level of acquisition of students of the sixth grade of primary school self-learning skills, and therefore a measure of self-learning skills was prepared, it turned out that there was a decline Among sixth grade students in self-learning skills, as the percentage of female students who obtained a low level on the self-learning skills scale is (56%).

Based on the foregoing, the research problem was identified in the presence of a low level of achievement in health education, and self-learning skills among sixth grade students, and in order to find a solution to this problem, the research sought to identify the impact of teaching a unit in health education using Web Quests on achievement and the development of self-learning skills among sixth grade students.

Research Questions:

The research sought to answer the following questions:

1. What is the impact of teaching a unit in health education using Web Quests on the achievement of sixth grade students?
2. What is the impact of teaching a unit in health education using Web Quests on the development of self-learning skills among sixth grade students?

Research Objectives:

The research tried to achieve the following objectives:

1. Identify the effect of teaching a unit in health education using Web Quests on the achievement of sixth grade students.
2. Learn about the impact of teaching a unit in health education using Web Quests on the development of self-learning skills among sixth grade students.

Importance of Research:

The importance of research lies in the following:

1- Drawing the attention of those in the process of building and developing health education curricula at the primary stage, to reformulate the topics of the curriculum according to the Web Quests strategy, as well as to improve their academic achievement in science and develop self-learning skills.

2- Provide a guide for the teacher to teach the Health Education Unit using Web Quests, which can guide the elementary teacher in teaching and topics involving health education areas.

3- Provide an activity booklet for the student in health education using the Web Quests strategy.

4- Provide a test of achievement in health education that can be useful for teachers in measuring achievement in health education among sixth grade students.

5- Provide a measure of self-learning skills in health education that can be useful for teachers in measuring the self-learning skills of sixth grade students.

Research Limitations:

The search was limited to the following limits:

1- Teaching the "Health Education and First Aid" unit proposed for the "First Aid" unit of the family education course for the sixth grade of primary school using the Web Quests strategy through Internet browsing based on the following elements: trip introduction, trip task, task procedures, educational resources for the task, task evaluation, conclusion, teacher's page, with the aim of developing students' knowledge, skills and attitudes in health education and self-learning skills.

2- A sample of sixth grade female students in one of the schools in Khamis Mushait Governorate in the Asir region in the Kingdom of Saudi Arabia.

3- Achievement in health education according to Bloom's six levels (remembering, understanding, applying, analyzing, synthesizing, and evaluating).

4- Self-learning skills represented by (benefiting from learning resources, self-evaluation, problem solving in the light of acquired knowledge, practicing extracurricular activities), and the focus has been on these skills because they are appropriate for the characteristics of the age stage of sixth grade students, according to what was shown by reviewing previous studies that dealt with the development of self-learning skills in the primary stage and the sources that identified the characteristics of students at this stage.

5- The study tools were applied in the second semester of the academic year 1441-1442 AH.

Search terms:

First: Health Education:

Salem (2018) defined it as: "students' knowledge of health information and facts, their sense of responsibility towards their own health and the health of others, in addition to providing them with positive attitudes and attitudes towards health, the environment and society" (p. 714).

The researcher defines health education procedurally as: an educational process aimed at providing sixth grade students with a set of knowledge, skills and sound health trends and developing their sense of responsibility towards their health and the health of others, which can achieve a healthy balance through positive and appropriate .educational methods that gain them practices for healthy lifestyles

ثانيًا: كويست الويب (Interactive Web Quest on achievement):

Al-Juaid and Al-Juhani (2018) defined it as: "One of the teaching methods used by the teacher, through which students perform activities based on research and inquiry by organizing the knowledge they obtain from the Internet and through interaction with others they can think critically about the topic under research, which leads to the growth of their mental skills" (p. 59).

The researcher defines Web Quests procedurally as: a set of activities based on the use of the Internet in searching and investigating information, carried out by sixth grade students, according to educational activities prepared in the proposed health education unit in science through interaction with others or cooperative groups to access information that is related to the unit's topics by research, investigation and knowledge navigation via the Internet.

Third: Achievement:

Al-Radadi (2019) defined it as: "the degree of acquisition achieved by an individual, or the level of success achieved in a subject or field of education" (p. 50).

The researcher defines achievement procedurally as: the extent to which female students in the sixth grade of primary school acquire knowledge , information and experiences and as a result of their effort during their learning of sound health habits through her study of the Health Education Unit in Science, and it is measured by the degree obtained by the student on the test prepared for this purpose in the research.

Fourth: Self-Learning Skills:

Mohammed, Othman, Al-Jili and Zakaria (2019) defined it as: "a set of skills that students must possess and employ accurately and proficiently to acquire knowledge on their own" (p. 86).

The researcher defines self-learning skills procedurally as: a set of skills that must be possessed by the sixth grade student and employed accurately and proficiently to acquire knowledge by herself by taking responsibility in benefiting from learning resources and finding a solution to problems in the light of the knowledge gained and practicing extracurricular activities and methods of self-evaluation.

Theoretical Framework**:-**

Web Quests:

Web Quests reflects the idea of contemporary teaching, which depends on the integration of technology in teaching and learning in order to achieve interdependence and functional integration between them by arousing the student's interest in an interesting and attractive manner, satisfying his needs, activating his motivation and desire to acquire knowledge, and Web Quests also relies on Web Quests. It is mainly on blended learning, where traditional face-to-face education is blended with education and e-learning in order to achieve activity and positivity for the student and develop deep understanding and higher thinking skills (Ali and Salam, 2019).

Web Quests is also one of the modern teaching methods that rely on inquiry, research and exploration, as it aims to developthe different abilities of students partially or completely by relying on electronic resources selected in advance by the teacher (Haridi, 2020).

Based on what has been shown, it is clear that Web Quests integrates traditional education and e-learning, thus making the student an effective role in the educational process and making him partially or completely responsible for his learning and acquisition of various knowledge and experiences through research and investigation, so this axis highlights them in detail some aspects related to them in order to employ them in achieving the objectives of research in developing achievement and self-learning skills in topics related to health education.

Definition of Web Quests It can be concluded that Web Quests are: Educational activities that depend on browsing the Internet to obtain information on a topic about health education within these activities, which requires students to cooperate and interact in groups to extract useful information from this information and present it to other groups to benefit from it to reach the goal of these activities.

Web Quests:

The philosophy of Web Quest is based on the assumptions of Piaget's theories and constructivism through the principle of knowledge constructivism, that is, the individual is the one who builds his knowledge by himself and rebuilds the individual to his knowledge through a process of social negotiation with others, and the importance of this social interaction in achieving mental development and getting rid of self-centeredness and building activity-based experience, and this philosophy greatly supports project-based learning as a constructivist approach to learning that helps students obtain knowledge at a high level, and acquire skills Social with the solution of real-life problems are skills highly related to the learning environment and working within professional learning communities (Al-Mozan, 2020).

Web Quests is also in line with its philosophy and the theoretical and psychological framework on which it relies with the principles on which communicative theory is based, the philosophy adopted by constructivist theory and the foundations on which blended learning depends, which works to provide attitudes and experiences that increase student activity and positivity and enable students to build knowledge themselves, through careful planning and optimal use of learning resources on the Internet and

full awareness of the student's tasks and goals he seeks to achieve. Under the supervision and guidance of the teacher, effective communication and participation between students and sources of knowledge (Ali and Salam, 2019).

According to the above and what was pointed out by (Hamed and Al-Saif, 2020; Al-Shahrani and Al-Harbi, 2020; Aliwi and Shalal, 2020), Web Quests is based on the following theories:

1. Piaget's epistemological theory: Based on the principle of cognitive constructivism, the student is at the center of the teaching and learning process, and he is the one who builds knowledge himself positively and effectively through interaction and cooperation with other students, thus achieving his cognitive growth and ridding him of self-centeredness and activity-based knowledge building.
2. Vygotsky's social constructivist theory is based on encouraging students to access information via Web Quests via the Web, providing them with positive search skills via the Internet, and encouraging teamwork and cooperation among students to develop their mental abilities and intellectual skills.
3. Consistent with the principles on which the structural approach is based, because one of the characteristics of the structural approach is thatit is student-centered and emphasizes building his knowledge of himself and rejecting passive reception of it, emphasizing his participation in activities in the educational process and linking his new knowledge with his previous experiences and knowledge, and emphasizing teamwork while recognizing the student's subjectivity and making him aware of his role andindividual responsibility, and that Learning assignments are realistic and meaningful.

It is clear from the above that there are many theories that support the philosophy on which Web Quests is built, including constructivism, cognitive, social, cooperative learning, and communicative theory, which in their entirety emphasize the active role of the student.

Web Quests features:

Web Quests is characterized by several characteristics referred to by each of them (Jaafar, 2020; Al-Juaid and Al-Juhani, 2018; Khadrawi, Muhammad and Al-Shazly, 2021; Ali and Salam, 2019; Aziz, Moawad and Sefin, 2020; Al-Mozan, 2020):

1. Web Quests provides students with assignments that allow students to use the skills of knowledge-based self-learning, which is an essential outcome of the knowledge journey.
2. It depends on employing modern teaching methods based on the use of technology, so that the student becomes at the center of educational activity and creates effective, active and more accurate learning.
3. Safe use of the Internet through educational activities and information searches, as Web Quests allows its designers to monitor the websites visited by students.
4. It contributes to providing students with indicators and indicators on the degree to which students acquire knowledge, and the extent to which they are able to absorb it, and employ it in various situations, contexts and projects.
5. They are often group activities in an active learning environment, so they help in working through a team and acquiring real assessment skills, taking responsibility and making decisions.
6. They may be monodisciplinary or interdisciplinary, which means they can transcend interdisciplinary boundaries.
7. It focuses on the element of suspense and motivation for the student by giving him the opportunity to play a certain role.
8. Suitable for all levels of students, as it contains a variety of educational activities, and therefore takes into account the individual differences between them.
9. It helps in investing the student's time and effort, as the focus is on the use of information with opportunities to express opinions and ideas in light of the information that has been seen.

The importance of Web Quests:

The importance of Web Quests in the educational field is summarized in what was pointed out by (Al-Juaid and Al-Juhani, 2018; Al-Shahrani and Al-Harbi 2020; Abdul Salam and Al-Shawari, 2020; Ali and Salam, 2019) as follows:

1. It works to develop the mental abilities of students, and to build a researcher who investigates information by himself and can evaluate himself, thus motivating students to self-learning.
2. It is a tool for differentiation and is consistent with the philosophy of differentiated teaching, as it provides the opportunity for students' choices in light of their inclinations, abilities and motivation to learn, thus taking into account the individual differences between students.
3. Technological techniques and electronic media are used to support student learning.
4. Increases students' motivation for teamwork and collaboration.
5. Developing students' problem-solving, decision-making and life skills.
6. Developing communication skills, using computers and dealing with information sources with quality and efficiency.
7. Increase effective educational experiences and the trend towards investing in modern technologies to achieve educational goals and understand and assimilate scientific content.
8. Provide the student with a safe path to use the Internet and technology in the educational process.
9. Developing the student's skills in evaluating the work of his colleagues in his group or in other groups.

The above shows the importance of Web Quests as it takes into account the individual differences between students and contributes to accustoming them to taking responsibility for their learning, as it depends on the implementation of a specific task in each trip, by providing the teacher with pre-prepared educational resources to obtain information that is useful in implementing the task, and the presence of students in groups contributes to stimulating cooperation and interaction between them and exchanging experiences to successfully implement the task.

Types and elements of Web Quests:

Dodge (1997) divided Web Quests into two types that are distinguished according to the time period for the implementation of the cognitive journey, mental abilities, computer skills of students, educational objectives and tasks assigned to them in Web Quests, and they were referred to by (Jaafar, 2020; Khadrawi, Mohamed and Shazly, 2021; Abdul Salam and Al-Shawari, 2020; Ali and Salam, 2019; Aliwi and Shalal, 2020; Al-Omari, 2020; Al-Qahtani, 2019):

The first type: Web Quests (short-term) : ranging in duration from one to four classes and is often the educational goal of them, and these trips are often limited to one subject, and may also be used as an initial stage to prepare for long-term trips, and its harvest provides the Web Quests (Web Quests) short-term in a simple form such as a short presentation, discussion, or answering some specific questions.

The second type: Long-term Web Quests: ranging in duration from a week to a full month, and the long-term Web Quests revolves around questions that require advanced mental processes, and the long-term Web Quests harvest is presented in the form of oral presentations or in written form to view the pivotal presentation of the task and control advanced computer tools such as presentation programs or image processing programs in the HTML markup language.

The first type of Web Quests has been relied on in this research, as it is commensurate with what the research seeks to achieve, by teaching the proposed unit within a specific period of time in order to develop achievement and self-learning skills in health education, and health education depends on practical practices to train students on sound health behaviors, and therefore it was necessary to use teaching methods such as Web Quests. Short to carry out tasks related to the practical application of health education such as first aid.

Web Quests includes seven key elements mentioned by (Jaafar, 2020; Al-Juaid and Al-Juhani, 18-20; Hamed and Al-Saif, 2020; Khadrawi, Mohammed and Al-Shazly, 2021; Al-Shahrani and Al-Harbi, 2020; Al-Zu'bi, 2017; Abdul Salam and Al-Shawari, 2020; Ali and Salam, 2019; Aliwi and Shalal, 2020):

1. Introduction: It includes the introduction to the lesson to arouse the motivation of students, as it clarifies the idea of the lesson, its elements and objectives, and includes a brief introductory paragraph directed to students to explain the tasks that this knowledge journey will answer, and here it should be said that this part must have suspense in order to increase students' motivation.

2. Task: The concept of the task refers to informing the student of what he will accomplish during the Web Quests through sequential steps that he must follow to reach the final goal, and the task must be feasible and appropriate to the time of the task, and through the task the required final result is determined.
3. Procedures (operations): This stage includes a definition of the steps that must be followed to implement the required tasks, in which students are divided into groups, work is distributed among them, the time and criteria necessary to carry out the tasks are determined, the final output that the teacher expects from students and the limits within which students work, and what is the nature of the skills required of them.
4. Sources: At this stage, the sites that the student must visit are listed, and linked directly to the required tasks, as well as traditional sources can be used, and the teacher must when choosing educational resources to take into account that they are commensurate with the level of students and their experiences, and the student should access them easily and be appropriate language, and be linked to the questions they answer at the end of the activity.
5. Evaluation: This stage is concerned with the way in which the students' performance will be measured, and at this stage the student evaluates his performance using some performance criteria, whether related to achieving educational objectives or related to the development of mental skills, cooperation skills with others and his technical skills.
6. Conclusions: At this stage, what students have gained during Web Quests is summarized and motivated to benefit from the results reached, in which students are given a set of recommendations about the journey, their work, results and information, and the teacher can ask students additional questions to encourage them to continue to discover and learn new knowledge and information related to the content discovered through Web Quests.
7. Teacher's page: The teacher's page is a free space to express an opinion or prepare a guide for other teachers, and it can contain the most important criteria or resources that the teacher relied on or benefited from in designing the knowledge journey.

The integration and sequence of Web Quests elements is clear, as it begins with an introduction to the task it seeks to implement and then this task and the procedures necessary to implement it are presented through the sources that the teacher provides in advance, and accordingly the task is implemented and at the end of its implementation the results are evaluated and the necessary information is extracted from the results reached by all students, and it is important in order for this trip to be implemented that the teacher has a guiding page To guide him on the mechanism of carrying out this trip.

The role of teacher and student in Web Quests:

Both (Al-Juaid and Al-Juhani, 2018; Al-Shahrani and Al-Harbi, 2020; Aziz, Moawad and Saifin, 2020; Ali and Salama, 2019) indicated that the teacher must do several things when using Web Quests in teaching, including the following:

1. Test the appropriate topic that can be displayed through Web Quests, and choose the appropriate design for the topic.
2. Navigating the web intensively to select the appropriate web pages for the subject and students, with the aim of providing diverse and easy learning resources across the web and related to the nature of specific tasks.
3. When designing Web Quests, make sure to give students enough time to implement them.
4. Explain exactly how Web Quests will be included and the resources that will be used, and ensure that tasks are flexible and fit individual differences.
5. Prepare students to participate, interact and discuss while carrying out tasks and distributing responsibilities among members to achieve Web Quests goals.
6. Formulate Web Quests central questions so that they stimulate students' thinking and motivate them to form an opinion, make a decision, or summarize information to produce new thinking.
7. Provide the student with the opportunity to search for information and use it to reach results and solutions that express his point of view in light of his imagination and creativity.

8. Facilitate students' work during Web Quests implementation and attempt to shift the responsibility of learning within the context of Web Quests to the student, and provide clear assessment to students.

It is clear that the teacher has an important role in the Web Quests, as his role is no longer limited to teaching information, but has become a guide and mentor during the implementation of the trip with the aim of learning, and the teacher's role in the trip is essential, as he is the designer and supervisor of the implementation of the trip, and he should provide students with an opportunity and an appropriate time to sail, collect and present information, and participate in evaluating their work and drawing the desired results from each trip.

The role of the student in Web Quests is to carry out the task required of him required by the Web Quests, implement the steps of the journey to build his knowledge by himself, discover information and knowledge, work to achieve goals using modern technology, especially the Internet, and cooperate with others to exchange ideas and opinions and update His experiences (Al-Shahrani and Al-Harbi, 2020).

Thus , it is clear that the student is the main engine in learning in the Web Quests, so he has the responsibility to search and collect information about the mission of the trip through what the teacher provided him with educational resources in advance, and to provide this information in a clear and detailed scientific manner to achieve the greatest benefit from the information he collected, and this also trains him to continue learning himself because he was trained on the correct methods to collect information from expanded sources and on his own without relying on anyone in his learning. and his acquisition of knowledge.

Web Quests and Health Education:

Employing Web Quests in health education requires taking into account several things to design a successful interactive cognitive learning journey, which we draw from some previous studies, namely: (Jaafar, 2020; Al-Juaid Al-Juhani, 2018; Al-Rashidi and Abdel-Aal, 2020; Ali and Salam, 2019; Aliwi and Shallal, 2020)

1. Possess skill in search engines, and verify that websites are suitable for the target group and health education topics.
2. Stimulate interaction, individuality and internal attitudes among students and employ them to serve the cognitive learning journey designed on one of the topics of health education.
3. The trip should be in the form of real tasks and problems related to students' interest and health education, and not just a separate activity from it.
4. The trip aims to collect information and data on health education in order to transform them into ideas employed to solve problems and questions and carry out the tasks posed by the knowledge trip.
5. The tasks related to health education should be multi-questioned and require research in more than one source of information.
6. To be in the form of questions implemented through the distribution of students into groups, and the distribution of responsibilities in the implementation of each task to the members of these groups, and the success of the journey related to health education depends on participation, discussion and interaction between the members of each group to carry out the task assigned to it.
7. Be easy while browsing and do not waste the student's time and effort.
8. The introduction should be exciting and motivating for students, provide clarifying and basic information on the subject of health education, and should include guidance that helps the student organize his steps and carry out the tasks required of him.
9. It enables the student to work independently andautonomously and the teacher's role is limited from a carrier of information to a path of learning.
10. The conclusion reminds students of what they have learned on the subject of health education, and encourages them to expand their expertise to include other fields in the field of health education.

In light of the above, it is clear the importance of employing Web Quests in health education, by taking into account the age level of students during the design of the trip, and that care is taken that the sites that have been included in the sources of the trip are safe and suitable for students, and that diversity must be done

in the design and presentation of the trip and that the evaluation is carried out within specific criteria to improve the performance of students during its implementation.

Previous Research and Studies

The first axis: previous research and studies that dealt with the Web Quests in science.

The study of Sung, Hwang & Chang, 2015 aimed to identify the effectiveness of teaching using Web Quests on the achievement of fifth grade students in Taiwan, and to achieve this goal the experimental approach was used, as the study sample consisted of (48) male and female students, divided into two equal groups, to which an achievement test and a critical thinking test in science were applied before and after, and the results found that there were statistically significant differences between the averages of the two groups for thinking Critic and collection, in favor of the experimental group.

Al-Juhani's study (2016) aimed to identify the effectiveness of the Web Quests strategy in academic achievement and the trend towards science among fourth grade primary students, and to achieve this goal, the experimental approach was used, as the study sample was intentionally selected from the fourth grade students at Riyadh Al-Salihin School in Tabuk, and the sample was divided into two groups, an experimental group of (23) students, and the control group of (21) students, the achievement test and the measure of attitude towards science were applied to the two groups. Before and after, the results found that there are statistically significant differences between the average scores of the experimental group and the control group in the post-application of the achievement test and the scale of the trend towards science, and the results also found a great effectiveness of the Web Quests strategy in academic achievement and the trend towards science among fourth grade primary students.

The study of Afifi, Kashko, Afifi and Almogi (2016) aimed to identify the impact of a proposed professional development program based on self-learning to improve teaching skills in the basic education stage in Gaza, and the study used to achieve this goal the experimental method, as the study sample consisted of (60) science teachers in the basic education stage, and they were divided into two groups, an experimental group and a control group by (30) teachers in each group, to whom a note card was applied, and the results found that there were statistically significant differences between the average scores of The experimental group and the control group before and after the application of the program in favor of the post-application, and the results also found a significant impact of the application of the proposed professional development program based on self-learning to improve the teaching skills of science teachers in the basic education stage.

Al-Qahtani's study (2019) aimed to identify the impact of an educational program based on Web Quests in developing scientific thinking skills among third grade intermediate students in Saudi Arabia, and the researcher adopted the experimental approach, where an intentional sample of (84) students was selected from the third intermediate grade, and it was distributed to two groups, the first experimental and the other control, and the scale of solving problems for scientific thinking was applied to the two groups before and after, and the results found that there is a statistically significant impact of the educational program Based on Web Quests in developing scientific thinking skills among third grade students in Saudi Arabia.

- **Benefits:**

1. Determine how Web Quests is used in the science teaching process, the procedures and steps related to it, the way its activities are designed, and the role of both teachers and students while using them in teaching health education and science.
2. Define the experimental design and its components, the approach through which the research is carried out, the method of preparing research materials and tools to suit the age stage of primary school students, the method of collecting data in it, analyzing them and extracting results according to them using statistical methods that are consistent with the mechanism of applying this approach.

Third: Research Hypotheses:

The research seeks to verify the following hypotheses:

1. There are statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the achievement test in health education in science, in favor of the post-application.

2. There are statistically significant differences at the significance level (0.05) between the average scores of the experimental group students in both the pre- and post-application of the self-learning skills scale in health education in science, in favor of the post-application.

Search Procedures

Research Tools:

Search uses the following tools:

1. Achievement test in the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education curriculum for the sixth grade of primary school.

2. Self-learning skills scale for sixth grade students.

They are set up by following these steps:

First: The achievement test in the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education curriculum for the sixth grade of primary school, and it was prepared according to the following:

(1) Determining the objective of the test: The goal of the achievement test is to measure the achievement of sixth grade students in the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education course for the sixth grade of primary school, according to Bloom's classification of its following dimensions: remembering, understanding, application, analysis, synthesis, evaluation.

(2) Preparation of the specification table: Abu Shanab (2010) pointed out that the specification table represents a detailed outline that determines the content of the test, links the content of the study material to behavioral educational goals, shows the relative weight of the subjects and behavioral goals, and can determine the number of questions and their grades using those weights, and know the total number of questions in the test, and the total score allocated to the test,

(3) Preparation of the test in the initial image: Based on the specification table, the questions of the achievement test were formulated in its initial form, and it consisted of (42) questions of the type of multiple choice, and one grade was determined for each question, so that the student gets one score if she answers a correct answer to the question, and zero for each wrong answer or not choosing any answer to the question.

(4) Formulation of test instructions: An introduction was developed for students about what is included in the test, and clarifying how to answer it by providing an illustrative example of the answer method.

(5) Determining the validity of the test: After preparing the test, it was presented to the same arbitrators of the subject materials, to express their opinions on the appropriateness of the test for the age stage, and the integrity of the formulation of its questions and their belonging to the dimension that you measure, and the arbitrators pointed to several amendments, including:

- Variety in place should be the right choice in each question.
- The question header in some questions is long and needs to be shortened.
- Rephrase some questions to make them clearer.

According to their opinions, the test was modified to be ready for application to the survey sample for research.

(6) Exploratory experiment for the test: The achievement test was applied to an exploratory sample other than the basic sample of the research, numbering (35) remote students by converting the test into an electronic test, with the aim of calculating the appropriate time for the test, calculating the difficulty and discrimination coefficients, and to verify the stability of the test according to the following:

1. The appropriate time for the test: The appropriate time for the test was calculated by calculating the average time of the first student to finish the test, which is (35) minutes, and the time of the last student to finish the test, which is (45) minutes, and therefore the appropriate time to apply the test is (40) minutes.

2. Calculation of the difficulty and discrimination coefficients for the test:

- Calculation of the difficulty coefficient: The difficulty coefficient is the ratio of the number of wrong answers to the total number of students who answered the test in each question (Zeitoun, 2009), and the difficulty coefficient was calculated according to the following equation:

$$\text{Paragraph Difficulty} = \frac{\text{Number of students who answered the wrong answer to the paragraph}}{\text{Total number of female students}}$$

- Calculation of the discrimination coefficient: The discrimination coefficient is meant to express the ability of the question to distinguish between the excellent student and the weak student in answering the question (Zeitoun, 2009), and the discrimination coefficient was calculated as follows:

✓ Arrange students in descending order in light of their overall scores for the test.
✓ Identifying the highest (26%) of female students to represent the category with the highest grades, and determining the lowest (26%) of female students to represent the category with the lowest grades while neglecting the middle category between them (48%), and the number of female students in both the upper and lower category reached (9) female students.
✓ Calculate the number of students who answered each paragraph correctly in the upper category, as well as in the lower category.
✓ Use the following equation to calculate the coefficient of discrimination:

$$\text{Discrimination Factor} = \frac{\text{Number of correct answers in the top group – the number of correct answers in the lower group}}{\text{Number of female students in one of the two groups}}$$

It turned out that the values of the difficulty coefficients for the achievement test questions range between (0.37-0.77), which indicates that the questions are not very easy or difficult, as the single whose difficulty coefficient ranges between (0.15-0.85) is suitable for female students, it is not very easy or difficult (Zeitoun, 2009), and it was also found that the discrimination coefficients for achievement test questions range between (0.33-0.89), which indicates that the questions are of good discrimination, as the single with a discrimination coefficient of more than (0.20) is Good distinction (Allam, 2011).

3. Test stability: The test stability coefficient was calculated using the Cronbach alpha equation, showing the coefficients of the constant and the distribution of questions for each level of achievement, and for the test as a whole.

It turns out that the stability coefficient of the test as a whole is (0.93), and for the levels of achievement they are for remembering (0.78), understanding (0.80), application (0.82), analysis (0.65), synthesis (0.73), and evaluation (0.88), all of which are high values, which indicates that the test is an acceptable degree of stability, and thus the achievement test in its final form becomes applicable to the research sample.

Second: Self-learning skills scale for sixth grade primary students: The scale was prepared as follows:

(1) Determining the goal of the scale: The aim of the scale is to identify the level of self-learning skills of sixth grade students, before and after applying the experience of teaching the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education course for the sixth grade of primary school using Web Quests.

(2) Identify self-learning skills and formulate scale vocabulary: Some of the following previous studies have been reviewed on self-learning skills, including (So, Chen & Wan, 2019; Afifi, Kashko, Afifi and Almogi, 2016; Law, Wan, Lee & Kwok, 2016; Mohammed, 2016; Hindawi, 2017), and accordingly, the following self-learning skills have been identified (benefiting from learning resources, self-evaluation, problem solving in the light of acquired knowledge, practicing extracurricular activities), and the scale was prepared based on these skills as Each of the skills included (5) paragraphs, so the scale in its initial form included (20) items distributed over (4) skills.

(3) Verification of the validity of the scale: The scale was presented to the arbitrators of the research materials, to express their opinions on the appropriateness of the paragraphs of the scale to the dimensions it measures, and the integrity and clarity of the formulation of these paragraphs, and all the arbitrators

praised the scale, and did not make any observation on all paragraphs of the scale and its dimensions, and thus the scale is ready to be applied to the survey sample for research.

(4) Grading system on the scale: The Likert five-point model was followed in estimating the scale's scores, and the scores were estimated as follows: (5) scores are given for response (always), (4) degrees for response (often), (3) degrees for response (sometimes), (2) score for response (rarely), and (1) for response (absolutely), and accordingly, the highest score on the scale is (100) degrees, and the lowest score on the scale is (20) degrees, so the high score on the scale expresses The student has a high level of self-learning skills, and vice versa.

(5) Exploratory experiment of the scale: The scale was applied to the same survey sample to which the remote achievement test was applied by converting it to an electronic scale, in order to determine the time of application of the scale, verify the internal consistency of the scale, and verify its stability, according to the following:

1. Determining the appropriate time to apply the scale: By calculating the time taken by the first student who finished answering the scale, and the time taken by the last student, and calculating the average between them, it was found that the appropriate time to apply the scale is (15) minutes.
2. Validate the internal consistency of the scale: The internal consistency of the scale was validated using the Pearson correlation coefficient between the score of each paragraph, and the overall score of the dimension to which it belongs.

It was found that there was a statistically significant correlation at the function level (0.001) between the scale statements and the dimensions to which they belong, and accordingly there was internal consistency between the scale statements and the dimensions to which they belong.

3. Verification of the stability of the scale: The Alfakronbach coefficient was used to verify the stability of the scale, it turned out that all the values of the stability coefficient are high, which indicates that the scale has a high degree of stability, which in its final form, became applicable to the research sample.

Carrying out the research:

The following steps were followed to perform the research:

First: Before implementing the teaching experience of the research:

1. Re-planning content in health education using the Web Quests strategy and preparing both an achievement test and a self-learning skills scale for the sixth grade of primary school and then adjusting them to ensure their honesty and stability, and then both tools and materials were converted into electronic models in order to apply the teaching experience for remote research using e-learning, and an interactive program was prepared based on the procedural unit and Web Quests. In order to facilitate the interaction of students while carrying out tasks and browsing the Internet, it is available on the following link:

Link to the Web Quest electronic interaction program that was relied upon in the application of the research teaching experience: Health education using interactive knowledge journeys (interactive-webquests.com)

2. Obtaining a letter to facilitate the task from the Dean of the College of Education at King Khalid University on 16/7/1442 AH, addressed to the leader of the twenty-seventh primary in Khamis Mushait.

Second: During the application of the teaching experience of the research:

1. Coordination was made with the family education teacher and the leader of the twenty-seventh primary school to apply the research experience for research, and to meet with the students through the Madrasati platform to introduce them to the Web Quests and send them the interactive program link.
2. The two research tools were applied pre-applied to the research sample by sending the following links:

Health Education Achievement Test: Achievement Test in the Health Education and First Aid Unit in the Family Education Course for the Sixth Grade of Primary School (google.com)
Self-Learning Skills Scale: Self-Learning Skills Scale for Sixth Grade Primary Students (google.com)

3. Teaching the "Health Education and First Aid" unit proposed for the "First Aid" unit in the family education course for the sixth grade of primary school using Web Quests for the research sample.

Third: After applying the teaching experience of the research:

1. Applying the two research tools post-applied to the research sample in the same way that the two tools were applied beforehand.
4. Obtaining the scene of completing the application from the school on 26/8/1442 AH.
5. Perform statistical manipulations on data.
6. Reaching and analyzing the results of the research to provide recommendations and proposals for research.

The researcher noted the following:

1. At the beginning of the application, the students were dispersed as the teaching style changed on them, but with the continuation of the teaching process, they became interactive during the implementation of tasks, and they have enthusiasm and strong competition to provide the best information and results about the tasks asked of them.

2. The researcher suffered from technical problems of the Internet by communicating with students and their presence during the application process, either due to the interruption of the Internet or technical problems with the devices available to them.

3. The application requires the presence of one of the students' parents, and this is what made the researcher continue to communicate with parents to complete the application process successfully.

4. During the application, the researcher noticed that the students have become self-learning skills and strive to collect information and present it well.

5. Through the teacher's communication with parents, they expressed their praise for the information contained in the unit, as the students and their parents benefited greatly from it in developing health awareness in various health fields, especially first aid.

Statistical methods of research:

After completing the data collection and to answer the research questions and test the validity of the hypotheses, the data were analyzed and processed using the Statistical Packages for Social Sciences (SPSS) program using the following statistical methods:

1- Holsty's equation for calculating the stability of the procedural unit analysis.
2- Difficulty and excellence coefficient to adjust the achievement test in health education.
3- Cronbach alpha stability coefficient to calculate the stability of the achievement test in health education and the measure of self-learning skills.
4- Pearson's correlation coefficient to measure the validity of the internal consistency of the self-learning skills scale items.

5- T-test to indicate the differences between the average scores of one group in the pre- and post-application of the achievement test in health education and the scale of self-learning skills.
6- Use the Cohen **equation** to calculate the magnitude of the effect using the following mathematical formula:

$$\text{Effect size} = \frac{\text{Average Post-Measurement} - \text{Average Pre-Measurement}}{\text{Standard deviation}}$$

Presentation, discussion and interpretation of research results

This chapter presented a detailed presentation of the results of the research and its discussion, which was reached through the application of the teaching experience of the research, which aimed to identify the

impact of teaching a unit in health education using interactive cognitive trips on achievement and the development of self-learning skills among sixth grade students.

The results related to answering the first question of the research and testing the validity of the first hypothesis:

The first question of the research reads: "What is the effect of teaching a unit in health education using interactive cognitive journeys on the achievement of sixth grade students?**", The first hypothesis of the research also stated that "**there are statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the achievement test in health education in science, in favor of the post-application**", and the following steps have been followed:**

– **To verify the first hypothesis of the research, the arithmetic averages, standard deviations, and the** Paired-Samples T-Test were calculated**, and Table (9) shows the results of this.**

Table (9): Arithmetic Averages, Standard Deviations and Paired-Samples T-Test for Students' Grades in Both Pre- and Post-Application of the Achievement Test in Health Education in Science

Statistical significance	Value (v)	Dimensional Application		Tribal Application		Dimension
		Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	
0,001	22.07	1.05	7.74	1.21	3.66	Remember
0,001	15.48	1.23	7.34	2.06	2.77	Understanding
0,001	21.23	0.93	7.99	1.51	3.14	Application
0,001	19.91	0.37	2.84	0.59	1.21	Analysis
0,001	16.72	0.48	2.83	0.69	1.14	Installation
0,001	12.46	2.74	6.89	1.70	2.93	Calendar
0,001	38.77	3.27	35.62	3.31	14.86	The test as a whole

It is clear from Table (9) that the differences between the average scores of female students in both the pre- and post-application of the achievement test in health education in science are statistically significant at the level of significance (0.01) in both (remembering, understanding, application, analysis, synthesis, evaluation) and the test as a whole, in favor of the post-application. In light of this result, the first hypothesis of the research can be accepted, which stated that "there are statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in each from the pre- and post-application of the achievement test in health education in science, in favor of the post-application."

– To define the effect of the independent variable "unit in health education using interactive cognitive journeys" on the dependent variable "achievement in health education in science", Cohen's equation was used, and Table (10) shows the results.

Table (10): The size of the effect of a unit in health education using interactive cognitive trips on achievement in health education in science among sixth grade students

Impact size	Impact value	Dimension
big	2,63	Remember
big	1,85	Understanding
big	2,54	Application
big	2,39	Analysis
big	2,00	Installation

Impact size	Impact value	Dimension
big	1,49	Calendar
big	4,64	The test as a whole

It is clear from Table (10) that the effect values are for remembering (2.63), understanding (1.85), application (2.54), analysis (2.39), synthesis (2.00), evaluation (1.49), and the test as a whole (4.64), all of which are greater than (0.8), and Abu Jarad (2013) pointed to "the three levels of effect size proposed by Cohen: small ranges between (0.2-0.49), average ranges between (0.5-0.79), and large ranges between (-0.8 and above)" (p. 362), and this indicates that the size of The effect of the independent variable "unit in health education using interactive cognitive journeys" on the dependent variable "achievement in health education in science" is significant.

Results related to answering the second question of research and testing the validity of the second hypothesis:

The second question of the research reads: "What is the impact of teaching a unit in health education using interactive cognitive trips on the development of self-learning skills among sixth grade students?**",** **The second hypothesis of the research stated that "**there are statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the scale of self-learning skills in health education in science, in favor of the post-application", **and the following steps have been followed:**

– **To verify the second hypothesis of the research, the arithmetic averages, standard deviations and the** Paired-Samples T-Test were calculated**, and Table (11) shows the results of this.**

Table (11): Arithmetic Averages, Standard Deviations and Paired-Samples T-Test for Students' Grades in the Pre- and Post-Application of the Self-Learning Skills Scale

Statistical significance	Value (v)	Dimensional Application		Tribal Application		Dimension
		Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	
0,001	**30.76**	**2.39**	**23.17**	**1.82**	**11.45**	Leveraging learning resources
0,001	**14.80**	**1.41**	**23.57**	**2.26**	**19.09**	Self-Evaluation
0,001	**47.07**	**1.05**	**24.29**	**1.27**	**15.46**	Problem solving in the light of acquired knowledge
0,001	**48.48**	**1.09**	**23.93**	**1.32**	**14.49**	Extracurricular activities
0.001	**74.23**	**2.29**	**94.96**	**3.40**	**60.57**	The scale as a whole

It is clear from Table (11) that the differences between the average scores of female students in both the pre- and post-application of the self-learning skills scale are statistically significant at the level of significance (0.01) in each of its dimensions and the scale as a whole, in favor of the post-application. In light of this result, the second hypothesis of the research can be accepted, which stated that "there are statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the learning skills scale." subjective, in favor of dimensional application".

– To define the effect of the independent variable "unit in health education using interactive cognitive journeys" on the dependent variable "self-learning skills", Cohen's equation was used, and Table (12) shows the results.

Table (12): The size of the effect of a unit in health education using interactive cognitive trips on the development of self-learning skills among sixth grade students

Impact size	Impact value	Dimension
big	3,68	Leveraging learning resources
big	1,76	Self-Evaluation
big	5,62	Problem solving in the light of acquired knowledge
big	5.79	Extracurricular activities
big	8,86	The scale as a whole

It is clear from Table (12) that the effect values are for the dimension of benefiting from learning resources (3.68), the dimension of self-evaluation (1.76), the dimension of problem solving in the light of acquired knowledge (5.62), the dimension of practicing extracurricular activities (5.79), and the scale as a whole (8.86), all of which are greater than (0.8), and this indicates that the size of the effect of the independent variable "unit in health education using interactive cognitive journeys" on the dependent variable "self-learning skills" is large.

Second: Discussion and interpretation of the results:

The results showed that there were statistically significant differences at the level of significance (0.01) between the average scores of the experimental group students in both the pre- and post-application of the achievement test in health education and the self-learning skills scale, in favor of the post-application, and the existence of a significant impact of teaching a unit in health education using interactive cognitive trips on achievement and the development of self-learning skills among sixth grade primary students, and the researcher believes that this is due to the characteristics of interactive cognitive trips, and this result is due to the following reasons:

1- The tasks included in the interactive knowledge trips contributed to the development of students' abilities to describe and explain some matters related to health education through the information obtained by browsing the Internet, and the way she presented this information requires her to analyze and criticize it and thus extract the appropriate from it for what was asked of her in each task.

2- The presence of various activities linked to the Internet helped develop the ability of students to collect information from different sources, and this skill developed positively with each serious task assigned to the student.

3- Linking tasks to topics related to health education stimulated curiosity and learning among students because these topics are important for their health, and this also increased their health awareness in several areas related to health education.

4- The presence of some topics related to first aid increased the students' enthusiasm for learning, increased their ability to absorb and apply this first aid, and made them more able to distinguish between different types of injuries, each of which needs special aid according to the symptoms associated with these injuries.

5- Through activities related to health education, some problems that need to provide innovative solutions were raised, which helped develop students' ability to provide creative ideas and solutions by browsing the Internet, collecting information and linking it to the student's previous experiences, which in turn led to expanding the knowledge structure of students.

6- Interactive knowledge trips provide a large amount of information to students during their implementation, and this made them more able to focus to obtain accurate and important information that benefits the topic around which the trip revolves.

7- Group participation during the excursions and the presence of an atmosphere of cooperation and discussion made the students gain additional experience from each other, increased their competition and made them more responsible for their learning.

8- Each activity included a schedule for the student to evaluate her performance during the activity on her own, and the students participated in evaluating the performance of their group and other groups, which contributed to the development of their criticism and self-evaluation skills.

9- Linking the topics in the unit with the real reality of the topics included in health education contributed to linking what students study in the classroom and the world around them by navigating them through the web and applying some activities related to health education in the virtual world.

10- The presence of some activities that require students to develop appropriate solutions and make wise decisions has increased their self-confidence and motivated them to express their opinions freely and without fear of error.

11- The discussions that take place during the navigation and the collection of information strengthen the students' abilities to comprehend, understand and deduce topics related to health education and link them, as the activities are collective and there is competition between groups to reach better results.

The results of this research have agreed with many previous studies that proved the impact of cognitive journeys in raising many learning outcomes, including the studies of (Al-Bayani and Al-Jumaili, 2020; Al-Juaid and Al-Juhani, 2018; Al-Juhani, 2016; Sung, Hwang & Chang, 2015; Al-Shdeifat, 2018; Al-Omair, 2021; Al-Qahtani, 2018; Al-Qahtani, 2019), **given that** Interactive cognitive journeys depend on providing educational tasks that help the student to carry out various operations by himself from searching and exploring information via the web and using and employing this information and not just obtaining it, and the cognitive journeys via the web generally focus on developing various mental abilities such as understanding, analysis, synthesis and evaluation of the individual, and thus this contributes to the development of students' academic achievement.

Therefore, it is important to use cognitive journeys to develop the achievement of students in the primary stage, to provide them with their knowledge, skills and trends, because education at this stage is a basis for the student in his life and the knowledge, skills and experiences he acquires at this stage have a reference and basis in his future educational life and life, and the current research has agreed with a number of studies that have confirmed the importance of academic achievement in the primary stage, including (Al-Juhani, 2016; Sakiz, Sung, Hwang & Chang, 2015; Shdeifat, 2018; Al-Otaibi, 2018; Al-Ghamdi and Ibrahim, 2017; Al-Qahtani, 2015), and therefore the use of interactive cognitive journeys in the development of achievement in health education at the primary stage is important because of their developmental characteristics and the fact that knowledge trips are an enjoyable way of learning based on exploration and the search for information, and the presence of competition and interaction between them, this makes them more motivated to obtain information and present it in distinct ways, and their involvement in evaluation and criticism Their work makes them more confident in themselves and holds them responsible for their learning, which can contribute to the development of self-learning skills.

This is consistent with what he pointed out from (Al-Harbi, 2018; Ammar and Bakri, 2020) that there is a correlation between achievement and self-learning skills.

The current research has agreed with a number of studies that have confirmed the development of self-learning skills at the primary stage, including (Hamed and Al-Saif, 2020; Reda, 2020; So, Chen & Wan, 2019; Al-Saqra and Al-Salmi, 2020; Afifi, Kashko, Afifi and Al-Mouji, 2016; Law, Wan, Lee & Kwok, 2016; Mohammed, 2016; Hindawi, 2017), where self-learning is one of the modern and effective methods in the learning process at all educational levels.(Including primary school) In it, the student is responsible for planning the lesson and choosing the scientific material that he wants to learn, and one of the features of this method is the possibility of applying it in all educational stages, each according to the student's mental abilities and level of age, where the student practices educational activities alone and moves from one activity to another, heading towards achieving the educational goals set freely and in the amount and speed that suits him, Using self-evaluation and the teacher's guidance and guidance.

Accordingly, the importance of using interactive knowledge journeys in developing self-learning skills among primary school students is evident. Students at this stage increase their curiosity and the fertility of imagination, so assigning them to activities and tasks depends on their ability to explore, research and

interact through interactive knowledge trips in topics related to health education can contribute to increasing their acquisition of knowledge and motivate them to learn and increase information because they feel that they have abilities that help them acquire knowledge on their own through electronic research and investigation.

Research Conclusion

First: Summary of research results:

The research reached several results, the most important of which are:

1- There were statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the health education achievement test in favor of the post-application.

2- There is a significant impact of teaching a unit in health education using interactive cognitive trips on the achievement of sixth grade students.

3- There were statistically significant differences at the level of significance (0.05) between the average scores of the experimental group students in both the pre- and post-application of the self-learning skills scale, in favor of the post-application.

4- There is a significant impact of teaching a unit in health education using interactive cognitive trips on the development of self-learning skills among sixth grade students.

Second: Research Recommendations:

In light of its findings, the research recommends:

1- Benefiting from the proposed unit in health education and first aid prepared in this research in the reality of teaching family education and science to increase the level of achievement of students in health education and develop their self-learning skills.

2- Benefiting from the achievement test prepared in this research to measure the level of achievement in health education among female students in the primary stage.

3- Benefiting from the self-learning skills scale prepared in this research to measure the level of self-learning skills of primary school students and work to develop them through the use of appropriate teaching methods to achieve this, such as interactive cognitive journeys.

4- Conducting training courses for family education and science teachers to use knowledge journeys in topics related to this subject.

5- Designing some lessons in family education and science related to health education using knowledge trips because of their role in developing health awareness among students and developing various skills, including self-learning skills by linking them to virtual reality.

6- Applying knowledge journeys in teaching other subjects related to the field of health education as they help increase students' understanding of information because they depend on students in the learning process.

7- Providing laboratories equipped with the Internet and computers in all schools in order to make the learning process using knowledge journeys more flexible and easy.

8- Linking schools to various sites as educational resources that help students in the process of sailing so that they do not enter the sites of dispersion of their education.

Third: Research Proposals:

The research proposes to conduct the following future studies:

1- Conducting a comparison between the use of interactive cognitive journeys and learning using the flipped classroom in developing higher thinking skills in teaching health education in family education and science, as the two methods are followed for e-learning.

2- The impact of training family education and science teachers on the use of interactive knowledge trips to develop their students' online research skills.

3- The effectiveness of using interactive cognitive journeys in developing other skills among primary school students such as scientific inquiry skills, self-organization of learning and the survival of the learning effect.

4- Problems related to the inability to apply interactive cognitive journeys in schools to teach different levels of study.

5- Develop a proposed conception of the family education curriculum in health education according to interactive knowledge trips, and identify its impact on the development of different levels of thinking and achievement among students in the primary stage.

Acknowledgments

"The authors extend their appreciation to the Deanship of Research and Graduate Studies at King Khalid University for funding this work through Large Research Project under grant number RGP2/436/45

References:

1. Abu Shanab, Suhair (2010). *Course Content Analysis: Formulating Behavioral Objectives - Specification Table.* Rafah: Educational bulletin from the Directorate of Education in the Rafah Educational Zone.
2. Al-Bayani, Adnan Hekmat; Al-Jumaili, Saja Sabah (2020). The extent to which the science book for the sixth grade of primary school includes the concepts of health education. *Journal of Literature,* University of Baghdad, (Supplement), 191-214.
3. Al-Juaid, Ohood Abdul Mohsen; Al-Juhani, Amal Saad (2018). The effectiveness of a proposed training program based on knowledge journeys via the web in teaching science to develop metacognitive thinking skills among middle school teachers in Tabuk. *An Arab Study in Education and Psychology,* Arab Educators Association, (102), 51-110.
4. Al-Juhani, Taghreed Tarbarish (2016). The effectiveness of the strategy of knowledge journeys via the web in academic achievement and orientation towards science among fourth grade students. *Journal of the Faculty of Education,* Assiut University, 32(3), 614-664.
5. Hamed, Badria Abdullah; Al-Saif, Abdul Mohsen Saif (2020). The impact of the strategy of cognitive journeys in teaching the jurisprudence course on academic achievement and the survival of the learning effect. *Saudi Journal of Educational Sciences,* King Saud University, (66), 51-74.
6. Al-Harbi, Abdullah Awad (2018). The extent to which self-learning skills are included in the chemistry book for the third grade of secondary school courses system in the Kingdom of Saudi Arabia. *Journal of Educational Sciences,* King Saud University, 30(1), 77-100.
7. Khadrawi, Zain El Abidin, Mohammed, Shaaban Abu Hammadi, El Shazly, Mahmoud Mohamed (2021). The effect of using knowledge journeys via the web in teaching engineering on the development of metacognitive thinking skills in mathematics among middle school students. *Sohag Journal for Young Researchers,* Sohag University, (1), 239-258.
8. Al-Radadi, Fahd (2019). *Self-organized learning and academic achievement.* Medina: Practical copyist for printing and photocopying.
9. Al-Rashidi, Haya Eid; Abdel Aal, Manal Abdel Aal (2020). An e-training program based on the Moodle learning management system to provide computer teachers with the skills of designing a strategy for knowledge journeys via the Quest Web. *Arab Studies in Education and Psychology,* Association of Arab Educators, (126), 165-192.
10. Reda, Hanan Rajah Abdel Salam (2020). A proposed conception to combine the strategies of the flipped classroom and problem solving and its effectiveness in developing self-learning skills and self-efficacy in teaching science among students of the College of Education. *Arab Studies in Education and Psychology,* Association of Arab Educators, (117), 71-124.
11. Al-Zu'bi, Abdullah Salem (2017). The effect of using the strategy of knowledge journeys via the Web Quest in teaching science in developing scientific thinking skills and understanding the nature of science among eighth grade students. *Islamic University Journal of Educational and Psychological Studies,* Islamic University of Gaza, 25(3), 349-369.
12. Zeitoun, Ayesh Mahmoud (2009). *Contemporary global trends in science curricula and teaching.* Amman: Dar Al Shorouk.

13. Salem, Ruqayya Ali (2018). The Role of Current Science Curricula in Libya in Achieving Health Awareness among Primary School Students: A National Study. *Journal of the Faculty of Education,* Port Said University, (24), 709-734.
14. Shdeifat, Munira Hassan (2018). *The effect of teaching life sciences through cognitive trips and concept maps on the achievement of ninth grade students in the Kasbah of Mafraq District.* Unpublished Master's Thesis, Faculty of Educational Sciences, A Al-Bayt University, Jordan.
15. Al-Shehri, Sabah Zafer (2017). *Evaluating the content of the science curriculum at the primary stage in light of proposed standards for health education.* College of Education, King Khalid University, Abha.
16. Al-Shahrani, Muhammad Barjas; Al-Harbi, Sultan Owaid (2020). The effect of using cognitive journeys (Quest Web) on developing computer skills among secondary school students. 20(1), 744-776.
17. Al-Saqriyah, Rabaa Mohammed; Al-Salmi, Mohsen Nasser (2020). The effect of employing electronic activities and the environment of blended learning on the achievement of eleventh grade students in Islamic education and the development of self-learning skills. *Journal of Educational and Psychological Sciences,* University of Bahrain, 21(1), 339-372.
18. Abdel Salam, Doaa Omar; Chaoui, Atiyat Mahmoud (2020). The effectiveness of a mentorship program based on the Quest – Web strategy to develop children's awareness of participation in managing priorities and its relationship to social responsibility. *Journal of Arab Research in the Fields of Specific Education,* Arab Educators Association, (19), 63-139.
19. Al-Otaibi, Noura Musaed (2018). *The effectiveness of teaching science using the young teacher strategy in developing achievement and motivation to learn among primary school students is known.* Unpublished Master's Thesis, College of Education, Qassim University, Saudi Arabia.
20. Aziz, Vivan Erian; Moawad, Nasrallah Mohammed; Sevin, Emad Shawky (2020). Using a program based on knowledge journeys via the web Quest Web in teaching engineering to develop divergent thinking among students of the second preparatory grade. *Journal of Mathematics Education,* Egyptian Society for Mathematics Education, 23(3), 177-191.
21. Allam, Salahuddin (2011). *Educational and psychological tests and measures.* Amman: Dar Al Fikr.
22. Ali, Khalifa Hassab; Salam, Salam Sayed (2019). The effect of using the Quest Web model to teach physical innovations on developing critical thinking skills among pre-service science teachers. *Journal of Arab Research in the Fields of Specific Education,* Arab Educators Association, (13), 93-140.
23. Olayan, Narges Kassem (2019). The use of modern technology in the educational process. *Journal of the Faculty of Basic Education for Educational Sciences and Humanities,* University of Babylon, (42), 271-288.
24. Aliwi, Sabreen Hassan; Shallal, Zeina Moussa (2020). The nature of cognitive journeys as an educational strategy in teaching history and geography subjects. *Arab Journal of Specific Education,* Arab Foundation for Education, Science and Literature, (14), 23-60.
25. Ammar, Omar; Bakri, Abdelkarim (2020). The importance of self-learning for the Association of Algerian Muslim Scholars. *Journal of Studies and Research,* University of Djelfa, 12(1), 1131-1141.
26. Omari, Abdulrahman Hakil (2020). The effect of using the strategy of cognitive journeys via the web on the development of spatial perception and academic achievement in the subject of social studies among primary school students. *Journal of the Faculty of Education,* Assiut University, 36(5), 274-325.
27. Al-Omair, Ahmed Hamad (2021). The role of the health counselor in achieving the objectives of health education for primary school students from the point of view of school principals and educational supervisors in Al-Ahsa Governorate. *Journal of Reading and Knowledge,* Ain Shams University, (231), 45-92.
28. Al-Ghamdi, Amani Khalaf; Ibrahim, Ibrahim Refaat (2017). The impact of an application-based strategy to integrate science and mathematics in the development of achievement among primary school students in the Kingdom of Saudi Arabia. *Islamic University Journal of Educational and Psychological Studies,* Islamic University of Gaza, 25(4), 126-145.
29. Al-Qahtani, Ali Saeed (2015). The effectiveness of a study unit based on the theory of learning based on brain research to develop academic achievement in the science course for the fourth grade of primary school. *Culture and Development,* Culture for Development Association, 16(96), 231-288.

30. Al-Qahtani, Nasser Ayed (2018). The *impact of a program based on the interaction between cognitive journeys through Quest Web and the constructive learning environment on acquiring problem-solving skills, scientific thinking and attitudes towards science among third grade intermediate students in Saudi Arabia.* Unpublished PhD thesis, Faculty of Graduate Studies, University of Jordan, Jordan.
31. Al-Qahtani, Nasser Ayed (2019). The effectiveness of an educational program based on knowledge journeys via the Web Quest in developing scientific thinking in science among third grade intermediate students in Saudi Arabia. *Islamic University Journal of Educational and Psychological Studies,* 27(5), 928-944.
32. Kishko, Imad Jamil (2015). *A proposed self-learning professional development program to improve the teaching skills and professionalism of science teachers in basic education in Gaza.* PhD, Faculty of Graduate Studies of Education, Cairo University, Egypt.
33. Mohamed, Hatem Mohamed (2016). The effectiveness of an enrichment program in science using blogs in developing electronic self-learning skills and visual thinking among gifted students in the primary stage. *Egyptian Journal of Scientific Education,* Egyptian Society for Scientific Education, 19(2), 39-83.
34. Mohammed, Mohammed, Othman, Ibrahim, Al-Jili, Othman, Zakaria, Abdul Farraj (2019). The reality of university students' acquisition of self-learning skills and the difficulties they face: Talal College of Education is a model. *Journal of the Faculty of Basic Education for Educational Sciences and Humanities,* University of Babylon, (42), 83-102.
35. Al-Mozan, Amal Ali (2020). Employing the strategy of knowledge journeys in enhancing the skills of professional learning communities and positive directions towards employing peer assessment among university students. *Educational Journal,* Sohag University, 73, 11-67.
36. Moussa, Mr. Elsayed (2020). The effectiveness of a self-learning program to develop awareness of future studies among graduate students, Social Studies Division, College of Education. *Journal of the Faculty of Education,* Mansoura University, 6(109), 1741-1770.
37. Haridi, Iman Khalifa (2020). The effect of an educational program using knowledge trips via the web on the course of physical education programs and camps to develop the cognitive and emotional aspect of students of the teaching division. *Assiut Journal for Sciences and Arts of Physical Education,* Assiut University, Special Issue, 2378-2418.
38. Hindawi, Iman Atef (2017). *The effectiveness of using a proposed strategy based on self-learning in developing the achievement of scientific concepts and some science processes in science for fourth grade students.* Unpublished Master's Thesis, Faculty of Education, Sadat City University, Egypt.
39. Ministry of Education in the Kingdom of Saudi Arabia (1438H). Procedural guide for the characteristics of growth in the primary stage and its educational applications Retrieved on: 20/8/1441 AH
40. https://drive.google.com/file/d/1WSLebv6VjhQ_vZfxdHB544gsXbF3sI7Q/view
41. Ministry of Education in the Kingdom of Saudi Arabia (1438). Namou Nama: *A procedural guide for the characteristics of growth in the primary stage and its educational applications.* Kingdom of Saudi Arabia: General Directorate of Guidance and Guidance.
42. Ministry of Education in the Kingdom of Saudi Arabia (1441H). Education policy document in the Kingdom .of Saudi Arabia. Retrieved on: 20/8/1441 AH
43. https://www.moe.gov.sa/ar/Pages/vision2030.aspx
44. .Ministry of Health (2022). *Health Information Survey in Saudi Arabia*
45. https://www.moh.gov.sa/Ministry/Statistics/Pages/healthinformatics.aspx?msclkid=291090fbb2eb11ecb6694ae1f14daa13
46. Dodge, B. (1995): WebQuests: A technique for Internet-based learning. *Distance Educator*. 1(2),10-13.
47. Law, N.; Wan, J.; Lee, Y. & Kwok, A. (2016). Self-directed learning in science education: Explicating the enabling factors. *International Conference of the Learning Sciences*, 1, 679-686.
48. Ontario Ministry of Education (2015). The Ontario Curriculum, Grades 1-8: Health and physical Education, Accessed on: 24/8/1441, from:
49. https://www.oaith.ca/assets/files/2015%20Health%20and%20Physical%20Education%20Curriculum.pdf

50. Sakiz, G. (2015). Perceived teacher factors in relation to students' achievement-related outcomes in science classrooms in elementary school. *European Journal of Science and Mathematics Education,* 3(2), 115-129..
51. So, W.; Chen, Y. & Wan, Z. (2019). Multimedia e-Learning and Self-Regulated Science Learning: a Study of Primary School Learners' Experiences and Perceptions. *Journal of Science Education and Technology*, 28, 508–522.
52. Sung, H & Hwang, G. & Chang, H. (2015). An Integrated Contextual and Web-based Issue Quest Approach to Improving Students' Learning Achievements. *Attitudes and Critical Thinking. Educational Technology & Society*, 18 (4), 299–311.
53. World Health Organization (2020). *Health 2020: Education and health through the life- course.* Accessed on: 24/8/1441, from:
54. https://www.euro.who.int/__data/assets/pdf_file/0007/324619/Health-2020-Education-and-health-through-the-life-course-en.pdf?ua=1