Chapter 1

INTRODUCTION

Rationale of the Study

In this pandemic year, there were a lot of students that divert the attention especially on the technology today which is spread globally and it is utilized in their studies such as mobile devices, computers, or laptops to create or research and surf on the internet about the lessons, activity, and assignments that are incomprehensible to the students. Searching for correct and reliable information of what the students need to find is quite hard sometimes and will never be accurate about what the students want to find on the internet. The researchers know how technology evolves, and it keeps evolving every few years but in the field of searching for correct ideas, information, and solutions are quite tricky, hard to find and sometimes provide an incomprehensible solution. That is why the researchers develop an easy way to make it more convenient for the students and lessen their burden in finding a solution, giving them correct information to fix their problem and make them understand the specific problem or solutions.

The researchers created a system that is a web platform for students and self-taught learners especially for those people who are in the field of programming who is looking for an immediate response, answer, and solution for their coding problems. It offers live video chat, text messaging, and a real-time code editor where users and teachers can modify one single editor and can communicate via text, audio, and video chat in one single browser. This will make learning and teaching more fun and easy experience.

The researchers’ objective is to provide a live solution for the students and self-taught learners especially to those people who are field of programming that are slowly learning in the field of programming that awaits oftentimes for many hours, days, weeks, and even months for an answer, response or solution online. In addition, the researchers make this kind of system to provide the students and programmers a platform where they can immediately find an answer or solution for coding-related problems via live communication through video chat, text messaging, and real-time code editor. Aside from that, the researchers also want to offer this platform for those people who are passionate about teaching (especially programming) and make money from it.

The researchers motivate this type of system to help the students, self-taught learners, and specifically those people that are in the field of programming. The researchers want to provide and build an environment where both users can collaborate with each other to solve their code-related issues instantly.

Related Systems

A study can never be established by depending solely on the researchers' own understanding of things and not referring to other thorough studies available, whether on the internet or in libraries.

According to Papert (1980) from the book “A Collaborative Learning Framework for Computational Thinking Development through Game Programming” published by de JESUS, Â. M., & SILVEIRA, I. F. (2021), claims that using computers in the classroom requires more than just getting instructions from the machine; it also requires the computer to "teach" the student (Papert, 1980). Educators must approach these learning activities from a constructivist perspective. Computational Thinking (CT) has a lot to offer in this regard. CT is viewed as a method of problem-solving that allows the solution to be implemented on a computer (Barr and Stephenson, 2011). In this way, CT-based instructional activities should utilize and build a set of CS skills in students. According to (Barr and Stephenson, 2011), claims that CT education should not be confined to technical elements and computer methods; it must also consider areas such as values, motives, feelings, preconceptions, and attitudes, such as having students collaborate to accomplish a common objective or solution. As a result, Collaborative Learning has a lot to offer in this area. necessitate instructor involvement. According to (Monereo and Gisbert, 2005). Collaborative Learning is a means of turning heterogeneity (which can be present in any group) into a positive feature that aids learning. This method improves psychosocial interaction abilities. Acceptance of different points of view, communication, bargaining, self-esteem, and so on are examples of these qualities. Furthermore, these abilities are built on ideals such as cooperation and solidarity. It's well recognized that the potential for meaningful learning is fueled by encounters. Gokhale (1995), claims that the phrase Collaborative Learning refers to a teaching style. This strategy necessitates students working in small groups toward a common goal at varied levels of performance. Learners are responsible for each other's learning as well as their own in this way.

As stated from the book published by Apeanti, W. O., and Essel, D. D., (2021).  Learning Computer Programming Using Project-Based Collaborative Learning: Students' Experiences, Challenges, and Outcomes claims that their projects allow students to work independently for long periods of time to create authentic products or presentations. Projects provide practical applications for information taught using the standard teaching method in this way. PBCL projects do not have a planned goal or follow predetermined courses, but instead include a greater degree of student autonomy, choice, and unsupervised work time (Thomas, 2000). Students can explore, collaborate, and apply new knowledge in projects that go beyond textbook content. As a result of multidisciplinary studies, real-world applications of academic information, and community service, students receive a sense of the authenticity of the content they study in the classroom (Thomas, 2000). The PBCL approach encourages students to share their knowledge, as well as the development of higher-order thinking abilities, accountability, and collaboration. Student’s exercise and strengthen soft skills such as leadership, social communication, and conflict resolution, which are difficult to develop through traditional teaching methods alone. (Jamal, Essawi &Tilchin, 2014).

In proportion to Camacho, I. U. A. J. (2021). Towards a Computer-Supported Collaborative Learning Approach for an Object-Oriented Programming Course claims that the VILLE resource allowed integrating surveys in an educommunicative way that allowed students to identify auditory, visual, and communicative variables in relation to the process of OOP, and that the resource was also used to create tutorials as didactic material where students expressed their concerns. The assessments were implemented through learning environments where the ViLLE resource encouraged communication, combining writing skills in order to compile the code and test it to find errors through the error messages that appeared on the screen. The main goal was to encourage students to collaborate by employing learning environments that promote cognitive, communicative, and technological growth in the OOP learning process. The study's main component is that it promotes the development of collaborative learning as a process of educational innovation in which it is proposed to generate a change in traditional teaching and learning methodologies, as well as the "acquisition of knowledge and skills through group and interaction work dynamics." The reworking of the course was a success. According to the study's authors, the pass rate climbed by more than 20% in both cases of the modified course. This study provides useful information on how a normal programming course might be altered to foster collaboration by utilizing available technology.