



A Study of Flaws in Delivering Programming languages and to impart programming logic in a reasonable approach

R.SivaKumar¹, M.ArunMarx², J.Geethanjali³
Asst Prof, Department of Information Technology^{1, 2, 3}
Prathyusha Institute of Technology & Management^{1, 2, 3}

Abstract:- One of the important objectives of computer science (programming) education is to develop fundamental proficiency in the area of computer programming. Knowledge of programming is so important that almost all computer science programs include it in their curriculum. This important subject is widely reported as being challenging for novices especially in the very beginning early lessons. Study on bilingual language instructions shows that use of native language instructions help students to understand the subject better and use of secondary language instructions increase their social context of choice. When a learner learns through a language other than the mother tongue, learner faces problems because his task becomes two-fold. The first is that the learner has to make sense of the instructional tasks, which are presented in the second language or an interactive manner, and the second is Learner has to get linguistic competence that is required for effective learning to take place.

Keywords : Programming Language, Logic, Teaching aids

I INTRODUCTION

The art of programming includes knowledge of programming tools and languages, problem-solving Skills and effective strategies for program design and implementation. A common approach in programming education is to first teach the basics of a programming language and then guide students towards effective strategies for the whole programming process. Therefore, the learning of the basic concepts is often emphasized; these form the basis for building more advanced skills. This aims at fostering the learning of the basic concepts and structures by creating dynamic visual learning materials for students. In order to create effective visualizations and educational strategies for their use, it is necessary to review the research previously published in the field.

Learning to program is generally considered hard, and programming courses often have high dropout rates. Educational research has been carried out to recognize the characteristics of novice programmers and to study the learning process and its connections to the different aspects of programming. Lately also differences between procedural and object-oriented education approaches have been studied, as Java and C++ have become common educational languages. We will now explore these issues more closely.

Learning programming contains several activities, e.g., learning the language features, program design, and program comprehension. Typical approach in textbooks and programming courses is to start with declarative knowledge about a particular language. However, studies show that it is important to bring also other aspects to the first programming courses. Variable initialization seems to be more difficult to understand than updating or testing variables. Bugs with especially loops and conditionals are common and actions that take place "behind the scene", like updating loop variables in "for" loops, are difficult for students.

II PROPOSED WORK

The learner will learn the Programming languages in their own mother tongue, after understanding the basic knowledge about the programming languages, then implement the concepts in the programming. The video tutorials are also to be provided to instruct the students about the programming.

We are planning to choose CSE and IT Department students from few Colleges (approximately 5 Engineering Colleges) in TamilNadu, then choose a group of students for our survey of testing Programming languages.

We will conduct a pre-test after survey that will contain questions for all groups to know their previous knowledge of programming. Each student had to attempt the pre-test individually, within a time limit on sixty minutes.

Remove all students who will get more than 50% marks in pre-test. Because we want to include only those who have either no or little knowledge of programming.



Study material will be provided to each student according to their group. Baseline group and control group will receive study material in English and experimental group will receive study material in their respective mother tongue. Study material will consist of videos and lab exercises.

Preparation of study material:

The Key objective of preparing these Study material is to make students understandable all the core programming concepts for both English learners and the mother tongue learners.

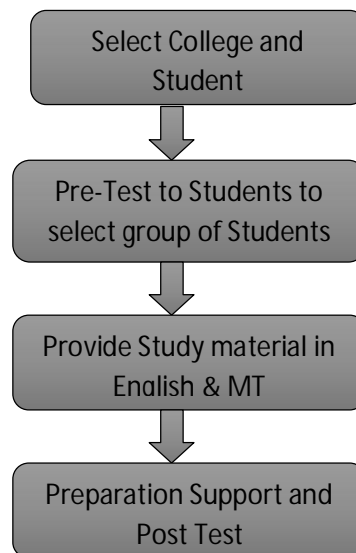
- make a mindmap so that we can identify smaller items to teach
- Categorize it in one of the content type i.e. fact / concept / process / procedure / principle
- Create text based instruction in English and mother tongue.

We are planning to prepare an Audio – Video based Slides to explain all basic Programing Concepts initially and then the core concepts.

Time required to learning each topic will be decided and a post-test will be conducted after that time is expired (deadline). Study material of a topic may contain lab exercises and student needs to submit the solution before deadline.

We will conduct a post-test. The post-test questions will map to the learning objectives. Each student had to attempt the post-test individually, within a time limit decided with each post-test, then analysis the result with pretest conducted for the same group.

III PROCEDURE



The above procedure is to be followed for all the colleges to select the group of students for the survey.

IV ANALYSIS

We will perform quantitative analysis of the post-test scores for the different groups. We will compute the means for each group. We will use factorial analysis to determine the effect of prior knowledge on the post-test scores.

V CONCLUSION

The main objective of this research is to provide very good study material for programming languages to secondary language learner, which includes text, slides, videos and audio formats too.



REFERENCES

1. yogendra pal 2011. Intelligent tutoring system to teach programming to bilingual students. 1st APS Report.
2. a literature study for developing visualizations in the Codewitz-Minerva project
3. Understanding programming languages - university of Essex. Uk
4. Analysis of State University results in Programming languages.