Leveraging Avid Use of Technology in Software Engineering Education

MICANS INFOTECH

ABSTRACT

- Most undergraduate computing students have limited professional software development experience due to which they lack the motivation to study software engineering, which is a mandatory course in their curricula.

- To compensate for this inherent lack of motivation, instructors of introductory software engineering courses continually devise novel strategies to enhance the appeal of SE education. These strategies seek to tie key SE concepts to industrial practices as well as students' real-life experiences.

- This paper presents one such approach; it leverages the prevailing reality that most computing students are now avid users of software technology. The approach consists of developing "focused questions", where each question pertains to a specific SE concept, technique, or a best practice.

CONTD..

- Students are then asked to find evidence that illustrates this concept from their everyday encounters with technology. This paper analyzes the students' responses from two such focused questions

- The analysis finds the students' responses to be thoughtful, broad, diverse, well rationalized, nuanced and deeply anchored in their own personal experiences. Moreover, the responses also highlight the students' knowledge and awareness of how software is now an integral part of the social and cultural landscape.

- Finally, anecdotal comments written by the students while reviewing the course at the end of the semester indicate that the students received this focused question approach in a positive light. They view it as a way to bring realism into the classroom, to keep them engaged and to encourage class participation.

EXISTING SYSTEM

▸ A majority of the students enrolled in these undergraduate SE classes have very little professional software development experience. Usually their exposure to software development is limited to programming assignments in pre-requisite courses such as object-oriented paradigm and data structures; that is acquired in academic environments.

▸ Students with such narrow experience lack the motivation and the context within which they can understand and appreciate the importance of software engineering best practices

DISADVANTAGES

▸ The software industry faces a critical shortage that arises from a growing demand for engineers equipped with the knowledge and skills necessary to design and build efficient and high quality software systems cost effectively.

▸ instructors are faced with the challenge of designing assignments so that the students value the need for SE principles, while simultaneously staying within the curriculum and other programmatic constraints.

PROPOSED SYSTEM

▸ This paper analyzes the students' responses from two such focused questions. The analysis finds the students' responses to be thoughtful, broad, diverse, well rationalized, nuanced and deeply anchored in their own personal experiences. Moreover, the responses also highlight the students' knowledge and awareness of how software is now an integral part of the social and cultural landscape.

▸ Finally, anecdotal comments written by the students while reviewing the course at the end of the semester indicate that the students received this focused question approach in a positive light. They view it as a way to bring realism into the classroom, to keep them engaged and to encourage class participation

ADVANTAGES

- students are eager to write large volumes of code, and instructors find it difficult to motivate software engineering techniques that deemphasize coding in favor of other activities including requirements analysis, architecture and design, testing and verification, and documentation and communication.

- The smaller problems, defined exclusively for labs that must be organized under severe resource and time constraints, further serve to undermine the importance of the very SE skills that they are designed to practice.

HARDWARE REQUIREMENTS

- Processor   :Intel Pentium IV 1GHz

- RAM   :256MB (Min)

- Hard Drive   :5GB free space

- Monitor   :1024 * 768, High Color inch

- Mouse   :Scroll Mouse(Logitech)

- Keyboard   :104 keys

SOFTWARE REQUIREMENTS

- OS : Windows XP/7/8

- Front End : Visual Studio 2010/ netbeans 7.1

- Back End : SQL Server 2005/ heidisql 3.2

- Browser : Any Web Browser

CONCLUSION

▸ This paper presented an empirical approach to improve the relevance and realism of software engineering education in the undergraduate computing curriculum. It leveraged the enthusiasm of millennial computing students in the use of software technology.

▸ The approach involved designing short, focused questions covering specific SE concepts or practices. Each question challenged the students to find illustrations of that concept in their daily encounters with technology.

▸ From the 20 or so focused questions that were assigned through the semester, two such focused questions and the corresponding responses were analyzed in this paper. The analysis indicated that the students have deeply engaged with many applications from a diverse range of domains. Their responses were nuanced, well thought out and rationally justified.

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