

Writeup for the talks of Dr. Steve Edwards 10/22

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Dr. Steve Edwards is a professor and the Associate Department Head for the Undergraduate Studies in the Department of Computer Science at Virginia Tech. In the seminar, Dr. Edwards said he is looking for students who are interested and excited about the independent study or research projects.

Dr. Edwards talked about a proposal to use gamification systematically to Nudge students toward productive behaviors. Automation, analysis, and learning analytics are the motivational points behind this proposal. To emphasize, Dr. Edwards provided some real-time examples. He also mentioned one of his popular publications titled **Using software testing to move students from trial and error to reflection in action**. He highlighted the data from the publication that students receive feedback only on the end result they produce and tend to equate a program that produces the right output with an effective solution. Students focus on output correctness first and foremost and the most immediate feedback students receive is on output correctness.

Later, Dr. Edwards mentioned another of his papers **Mining data from an automated grading and system by adding rich reporting capability**. In this paper, he presented a solution to the issue of accessing and analyzing the large amount of data that is generated from an automated grading system. Complex reports can be used to mine data from student coursework to answer deep questions about their performance and habits. He also suggested the development of several systems for routinely logging data about computing students.

After that, Dr. Edwards raised the questions, what will the next generation be, where do we need to go and how will we get there. He mentioned programming language features, problem-solving strategies, programming patterns, algorithms strategies, and idiomatic coding as elements of knowledge. Time management, self-checking as you go, self-monitoring, working incrementally, setting goals are part of behavior. Beliefs include growth mindset, self-efficacy, responsible for my own learning, self-esteem. Then Dr. Edwards provided feedback from a student as a video in the talk presentation.

In the seminar, Dr. Edwards described behavioral design. He mentioned the last decade as the breakout area for behavioral design. He pointed to **Nudging** as a part of behavioral design. Later he provided some examples of nudging. Games are also important in the shape of behavioral design. He then mentioned some different kinds of games that can shape students' behaviors in different ways.

Dr. Edwards asked a question can we come back with better feedback strategies with behavioral design and said if yes then it can cause a bright future. He listed **Time Management, Incremental Development, Self-checking, Persistence and Planning** are the important factors that will be very much helpful for the students to shape their behavioral design.

Dr. Edwards presented a very helpful talk. As a student, I always feel the need to improve behavioral that can be helpful for my personal and academic life. After this presentation, I have found a new thing to think about behavioral shaping. Indeed it's a very practical and good seminar.