Chapter 5

Developing Team Work in IT Education to Foster Student Engagement

Nigel McKelvey
University of Ulster, UK

Kevin Curran
University of Ulster, UK

ABSTRACT

Teamwork is an important aspect that should be provided by both employers and employees. This chapter proposes relating this ethos to an educational environment in order to foster encouragement among students. Students demonstrating professionalism can provide important discussion points that can help the class environment run more efficiently. When issues arise in a class, students learn not to hesitate in speaking up. Many co-workers fail to work as a team because people do not voice their opinions on certain matters. Learning how to voice that opinion can aid students/employees in progressing an assignment without hindering any other processes. This chapter outlines how to incorporate teamwork into IT educational environments in order to encourage students to engage more with the process. It also gathers information based on student, staff, and industry surveys and strives to highlight the importance of teamwork as a skill essential for IT graduates.

INTRODUCTION

One of the most fundamental aspects of computer lab exercises is that students engage with the process of learning new technologies. These new technological skills help aid students in their goal to work in teams. By becoming active members of teams, students learn how to design, plan and build challenging projects and assignments (Fruchter R, 2001). Working together means the group can reach an understanding of the requirements in a much more efficient and coherent manner. The process of communication means that each group member will learn what part they play in the team and as a result can encourage each other to identify and nurture individual skills (Fruchter R, 2001).

Ever changing technologies are forcing the preservation of competitiveness and as a result are...
Developing Team Work in IT Education to Foster Student Engagement

forcing higher educational institutions and business analysts to cooperate more effectively. According to their educational, scientific, knowledge-maker and generative characteristics, universities and colleges receive and play a more active role in the development of the economy (Marosi I & Bencsik A, 2010). This in turn implies that colleges and universities need to play a greater role in preparing their graduates for life in industry.

It is important that no single team member takes full responsibility for every task. Everybody must play their part and the knowledge spread among the group (Lerner S, et al. 2009). By doing this, students can engage with the process of ‘learning to learn’. Allowing students to determine roles is a crucial part of the learning process which will inevitably lead to greater efficiency in subsequent tasks. It is essential that the promotion of teamwork activities gets incorporated into the curriculum of an IT related discipline. Lecturers and facilitators often disagree about the direction colleges and universities should take when it comes to delivering modules that incorporate team activities. The majority of teamwork training within IT disciplines focuses in areas of case studies but more emphasis should be placed on developing team strategies to deal with code design and implementation which is more akin to a work environment. Generally all teams are different in terms of membership, group dynamics, and goals yet they go through similar processes as they develop from an immature team into one that is mature and productive (Lerner S, et al. 2009).

How effective a team’s work is depends entirely on the internal group processes. In other words, the manner in which conflicts are managed, the amount of trust between members, and the use of an appropriate leadership style, etc (Lerner S, et al. 2009). It is important to note that team members need to be trained in how to work together and taught to understand the professional role and responsibility of each person. There is no ‘I’ in TEAM!

BACKGROUND

In their paper “What is the Curriculum Development Process?” Clarke and Stow state that the term curriculum is: “a written plan which drives instruction. It delineates the skills and concepts taught and evaluated to enhance student achievement. Composed of a content area philosophy, strands with definitions, program goals, aligned scope and sequence, learner outcomes, and assessment tools, it is intentionally designed to meet district, state, and national standards.” (Clarke N & Stow S, 2006)

Often the issue with developing a curriculum for a module within an IT discipline is that technology is constantly evolving. As a result, a module can become quickly outdated and below standard. Students deserve a module that will teach them about technologies and concepts that are current and relevant to their future careers. Incorporating reflective practice as teaching professionals can greatly help with this common issue. Misguided or redundant concepts can be removed or updated incrementally. This in turn goes some way to developing a curriculum that satisfies the requirements. This review should provide some insights into how developing a curriculum for IT can be problematic and also present some thoughts on how this might be addressed.

It is imperative that teachers and facilitators strategically align programme learning outcomes with module learning outcomes so that students can acquire the technological skills required by both educational establishments as well as by society itself (Fox-Turnbull W & Snape P, 2011). The responsibility for this curriculum falls on the facilitators and governing bodies of particular schools/colleges. With this responsibility comes accountability for the academic well-being of individuals and groups of people (Allen A & Mintrom M, 2010). It is evident that planning a successful educational framework within IT requires certain elements to be addressed effec-