壹、 中英文摘要

摘要

軟體產業的興衰與軟體工程師的質與量有密切關連，我國大學與技職院校資訊相關科系每年畢業人數近三萬人，惟軟體業者仍感新進工程師之人數不足，而技職院校的畢業生仍有甚多找不到適當的本行工作，可見我國資訊工程師之訓用失調。有鑒於此問題之嚴重，行政院科技顧問組召集軟體業者依據軟體工程師的工作性質之不同，將軟體人才分為十四類，進而訂定各類人才應具的核心知識，以作為日後軟體工程師能力鑑定之依據，藉以提升我國軟體工程師的質。

技職院校資訊相關科系畢業生進入軟體產業主要以從事軟體程式設計為主，本計畫配合行政院資訊軟體人才培訓提升效能策略規劃構想，以程式設計師應具核心知識為依據，分析技職院校資訊相關科系的課程，發現二者間有不少差距，此為我國資訊工程師訓用失調之主因；因此依據程式設計師應具核心知識制定技職院校資訊相關科系程式設計類核心課程，共制定「計算機概論」、「資料結構與演算法」、「資料庫系統」、「軟體發展技術」、「程式語言」及「XML 語言」等六門課程，每一門課程均詳細說明其教學目標、課程內容、詳細課程大綱及實習項目。此六門課程之制定是採滾動發展方式完成，首先共同擬定「計算機概論」之教學目標與課程內容，續由一研究同仁邀集該校同事制定詳細課程大綱及實習項目，將此初稿交由其它研究同仁邀集所屬學校同事複審其完整性與合適性，再由全體研究同仁依各校所提問題逐一檢討與修正，若有不適合處則編入其它適合課程；再陸續制定其它課程；全部課程制定完成後，除與與勞委會乙級程式設計師技能檢定考試科目一一比較外，且以座談會方式邀請各技職院校資訊相關科系教師代表共同檢討與修正。

此研究所制定之課程與詳細課程大綱可供各技職院校資訊相關科系作為開課之參考依據，以提升教學品質；若能獲得教育部補助，邀請教學各技職院校資訊相關科系同仁共同制定適用國內技職院校資訊相關科系之本土教材與數位學習補充教材，將獲得更大效益。

關鍵字：軟體人才分類、程式設計師、核心知識、核心課程、證照

Abstract

The quality and the quantity of software engineers relate to the prospect of our software industry. In our country, there are more than thirty thousand of bachelors graduated from universities and institutes of technology from the domain of information system related departments. However, the software industry still has the problem to recruit the qualified candidates. It is the evidence of mismatching between our software engineer education programs from the industrial requirements. Upon the awareness of such problem, Science and Technology Advisory Group of Executive Yuan had submitted the adviser panel from the software industry to classify 14 categories of software engineer specialists according to their tasks. To prompt the quality of software engineer qualification, the core-knowledge of each specialist has been identified and specified as the criteria of certification programs.

It is the primary goal to help the graduated students to enter software industry for software engineering related works in the information related program at the vocational education institutes. It is the target of this project to in line with the strategic plan for upgrading the effectiveness of information software education programs of Executive Yuan. We based on the requirements of programmer's core knowledge to analyze the curricula of information system departments in vocational institutes and discovered the gap in between. It is the main cause of mismatching in the supply and demand of software engineers. With such understanding, the center curricula are proposed as the core knowledge for the information system related department in vocational institutes to coach programmers. Those core subjects including: "Introduction to Computers", "Data Structure and Algorithm" , "Database system", "Software Development Techniques", "Programming Languages", and "XML languages." The teaching plan of ach subject has been detailed with its teaching goal, subject contents, detail syllabus, and practicing exercises.

Thesee teaching plans are developed according to the listed order to extend the profession. The development processes of "Introduction to Computers" are initiated by one researcher to gather advice from his/her colleagues to build up the detail syllabus and course contents. The draft was then passed through this research team to collect the suggestions for the completion and appropriateness. After the suggestions collected, the discussion meetings were held to clarify each adjustment and review. Each adjustment will be placed according to the conclusion of the meetings. After the completion of the subject, the contents were compared with the level-two qualification programmer exams of Council of Labor Affairs for appropriateness. A discussion panel that invited the representatives of in information system related teachers from vocational institutes for the final verification and review.

The purpose of this study is to develop a detail contents and syllabus for the related departments of vocational institutes as the curricula design reference. Hopefully, it can serve the purpose to upgrade the qualification of the graduation students in software industry. It may be more effective when Ministry of Education can further sponsor the processes of developing supplemental curricula material form the task force from the teacher of information system related department in vocational institutes.

Keywords: Software specialist category, programmer, core knowledge, core curriculum, certification