Component-based development refining the blueprint of software engineering education

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ABSTRACT: An effective software development strategy is critical to an organisation’s success in achieving its key business objectives, including the effective use of resources, better time-to-market and adaptation to changes in business needs and requirements. Rapidly rising demand for more flexible, adaptable, extensible and robust complex enterprise software systems cannot be met unless software development makes a transition from a craft activity, involving informal kind of reuse (e.g., code sharing and design patterns), to a modern industrial process capable of using systematic reuse strategies based on Component-Based Software Development (CBSD) and Agent-Oriented Software Development (AOSD), which extends CBSD. The paper discusses the necessity of refining the blueprint of software engineering education in order to make the transition from traditional software development to CBSD and AOSD. The paper also presents a new practical approach for increasing the effectiveness of the learning experience by integrating CBSD/AOSD research into the software engineering curriculum and providing students with the foundation for life-long learning to help enable them to expand their engineering knowledge and skills throughout their careers.