Community, Content and Collaboration Management Systems: Socio-Constructivist Scenarios for the Masses?

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Abstract: While there are dozens of "e-learning" platforms, not many systems support the "orchestration" of rich socio-constructivistic learning scenarios. We suggest to explore the pedagogical potential of the increasingly popular portals we call "Community, Content and Collaboration Management Systems" and we present our work strategy.

The Problem

Currently, there exist many variants of web-supported pedagogies, e.g. transmission of contents, web-based instruction, learning by apprenticeship in virtual environments, pedagogical work flow scenarios. Constructivist (e.g. project or problem-based) scenarios are quite popular (Wilson & Lowry, 2001) but supporting technology is hard to find and there is a particular need for tools that support socio-constructivist learning at the activities level. Empirical research (e.g. Dillenbourg 1999) reveals that collaborative or collective constructivist learning is not per se an effective learning method. It is more effective if individuals and groups have to evolve within well-specified scenarios, i.e. sequences of phases within which group members do tasks and play specific roles. While teachers can orchestrate complex scenarios with very little technology, the effort can soon become cumbersome.

Remember 1993's slogan of "shifting the focus from teaching to facilitating"? Todays "E-learning" systems are mostly anchored in the behaviorist CBT tradition. They focus on content delivery and the teacher's "facilitator" role is degraded to deal with web contents, quizzes and grading. They fail to support rich socio-constructivist scenarios engaging students in active project-based learning. Therefore we argue that R&D in educational software should not just focus on improving passive "interactive" courseware but on tools supporting students to solve more complex and open-ended tasks.

The Work Plan and Strategy

Implementation strategy **#1**: **Imitation of "Internet culture"**. Web pages, forums, e-mail and FTP are successful because they support the basic needs for exchange, communication and collaboration. While simple web technology does enable creative educational scenarios it has 2 drawbacks: (1) Maintaining static web-sites is time-consuming and simple discussion systems do bad knowledge management. (2) More sophisticated scenarios (like co-authoring or work-flow) are badly supported. Now, community web-sites facing the same problems found an answer. Within the last two years have sprung up what we coin C^3MS (Community, Content and Collaboration Management Systems). Inspired by personal weblogs, news systems, simple CMS and various groupware like file-sharing or calendars, C^3MS are modular tools for configuring interactive community web-sites. Systems like PostNuke or PhPWebSite offer a good set of core portal functionalities, such as user administration, a news/journal system, web-links sharing, search, FAQs and polls. Extension mechanisms allow third parties to contribute additional functionalities like collaborative hypertexts, picture galleries, simple content management systems, event calendars, chats, project managers, file-upload, and glossary management. Since we believe that a large number of rich educational scenarios can be supported by modular C^3MS systems at reasonable cost, we started deploying a few systems with teachers to investigate.

Implementation strategy **#2**: **Adapt to teachers**. Success stories of new technologies in education are often related to the teachers' ability to insert it into existing knowledge. It is easier to promote change when technology is simple and when teachers can relate to "models" they know, even if they are not necessarily related to teaching. Teachers must have an operational awareness (vonGlasersfeld) in addition to operational control. Inspired by Guzdial's (2002) work with CoWeb, we start by presenting simple activities that can be enhanced with C^3MS. At

the same time, we also introduce these portals as community tools (for teacher support) and we hope that the perception of their usefulness for "professional life" will help introducing them to education in the narrow sense. A first version of the catalog of educational scenarios and C^{3}MS bricks is available (http://tecfa.unige.ch/proj/seed/catalog/) and we hope to observe and report interesting experiments within the next 2 years.

Implementation strategy **#3**: **Support different user categories**: Such a system in order to be acceptable by the teacher community should appeal to different levels technical competence and "activeness". We discriminate four levels of use with respect to how teachers appropriate learning technologies: (1) Reusing: teachers who appreciate ready-to-use material. In our case, this is a scenario that has been instantiated with content. (2) Editing: teachers who feel the need to modify the content of a scenario they appreciate. (3) Designing: this means in our case to compose completely new scenarios by re-assembling basic components. (4) Programming: some teachers like to program and we can expect them to develop modules. The originality of our approach is to enable teachers to work according to their technical skills, to the personal investment, to what is available.

Implementation strategy **#4**: **Use synergies**. C^{3}MS are by definition a space for communities. This first means that we could integrate educational activities into existing community portals, e.g. create campus portals that are actually useful to education and not just an underused presentation/information tool designed by some central service. Conversely, since people learn a lot from informal exchange within tightly or loosely defined communities (fellow learners, professors, experts), we could open educational portals to other activities (news, sharing of links and contents, forums for professional activities). Additional synergies can be gained from making contents available (as MIT's OpenCourseWare or Berkeley's IU Project) and allowing the outside world (other classes, teachers, parents, experts) to annotate. Lastly, while each small community may want to run its own portal, contents can be syndicated. Building information and communication networks has become easier than ever.

Implementation strategy **#5**: **Don't overdo it**. We do not know yet the boundaries of C^{3}MS portals. One major drawback seems to be the lack of provision for integration (e.g. data-flow) between applications which are required for more complex CSCL scenarios. Another drawback is the management of contents over time. Handling these issues require the same sort of planning that a traditional user-driven educational web site does and future systems (on which we started design work) should address these issues.

Conclusion

This research on the use of "Community, Content and Collaboration Management Systems" for socio-constructivist scenarios is at its beginning stage. So far, we initiated a few field experiments and we produced an initial catalog of socio-constructivist activities with C^{3}MS bricks. We plan to support further sites, will prepare more dissemination materials and hope to report results within the next 2 years. We are aware that C^{3}MS portals are not fit for complex CSCL workflow scenarios, but we believe that there is an important need to actively support educational scenarios with simple technology under the control of teachers. Finally, C^{3}MS may be a chance to maintain the Internet Spirit in education which is threatened by the philosophy of many e-learning systems.

References

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