COMPUTER SUPPORT FOR COLLABORATIVE LEARNING: FOUNDATIONS FOR A CSCL COMMUNITY pdf

1: ijCSCL :: Journal Contents

CSCL '02 Proceedings of the Conference on Computer Support for Collaborative Learning: Foundations for a CSCL Community Boulder, Colorado â€" January 07 - 11, International Society of the Learning Sciences Â©

History[edit] Interactive computing technology was primarily conceived by academics, but the use of technology in education has historically been defined by contemporary research trends. The earliest instances of software in instruction drilled students using the behaviorist method that was popular throughout the mid-twentieth century. In the s as cognitivism gained traction with educators, designers began to envision learning technology that employed artificial intelligence models that could adapt to individual learners. Six years later in , the term "computer-supported collaborative learning" was used in a NATO -sponsored workshop in Maratea , Italy. It began quarterly publication by Springer in It is peer reviewed and published both online and in print. Theories[edit] The field of CSCL draws heavily from a number of learning theories that emphasize that knowledge is the result of learners interacting with each other, sharing knowledge, and building knowledge as a group. Since the field focuses on collaborative activity and collaborative learning, it inherently takes much from constructivist and social cognitivist learning theories. The second key element is what Vygotsky called the Zone of proximal development. This refers to a range of tasks that can be too difficult for a learner to master by themselves but is made possible with the assistance of a more skilled individual or teacher. Cooperative learning , though different in some ways from collaborative learning, also contributes to the success of teams in CSCL environments. The distinction can be stated as: The five elements for effective cooperative groups identified by the work of Johnson and Johnson are positive interdependence, individual accountability, promotive interaction, social skills , and group processing. Each of these learning theories focuses on the social aspect of learning and knowledge building, and recognizes that learning and knowledge building involve inter-personal activities including conversation, argument, and negotiation. While researchers, in general, have relied on learning theories developed without consideration of computer-support, some have suggested that the field needs to have a theory tailored and refined for the unique challenges that confront those trying to understand the complex interplay of technology and collaborative learning. The theory suggests that learning is not a matter of accepting fixed facts, but is the dynamic, on-going, and evolving result of complex interactions primarily taking place within communities of people. It also emphasizes that collaborative learning is a process of constructing meaning and that meaning creation most often takes place and can be observed at the group unit of analysis. There are four crucial themes in collaboration theory: Further, these technologies and designs should strive to remove the teacher as the bottleneck in the communication process. In other words, the teacher should not have to act as the conduit for communication between students or as the avenue by which information is dispensed. Finally, collaboration theory-influenced technologies will strive to increase the quantity and quality of learning moments via computer-simulated situations. In his book on "Group Cognition", [13] he provided a number of case studies of prototypes of collaboration technology, as well as a sample in-depth interaction analysis and several essays on theoretical issues related to re-conceptualizing cognition at the small-group unit of analysis. He then launched the Virtual Math Teams project at the Math Forum, which conducted more than 10 years of studies of students exploring mathematical topics collaboratively online. The VMT later focused on supporting dynamic geometry by integrating a multi-user version of GeoGebra. The VMT project generated and analyzed data at the small-group unit of analysis, to substantiate and refine the theory of group cognition and to offer a model of design-based CSCL research. Strategies[edit] Currently, CSCL is used in instructional plans in classrooms both traditional and online from primary school to post-graduate institutions. Like any other instructional activity, it has its own prescribed practices and strategies which educators are encouraged to employ in order to use it effectively. Because its use is so widespread, there are innumerable scenarios in the use of CSCL, but there are several common strategies that provide a foundation for group cognition. One of the most common

approaches to CSCL is collaborative writing. Though the final product can be anything from a research paper, a Wikipedia entry, or a short story, the process of planning and writing together encourages students to express their ideas and develop a group understanding of the subject matter. For example, wikis are a way to encourage discussion among learners, but other common tools include mind maps, survey systems, and simple message boards. Like collaborative writing, technology-mediated discourse allows participants that may be separated by time and distance to engage in conversations and build knowledge together. Students do their exploring in an online environment, use technology to better understand a physical area, or reflect on their experiences together through the Internet. Virtual worlds like Second Life and Whyville as well as synchronous communication tools like Skype may be used for this kind of learning. Complex problems call for rich group interplay that encourages collaboration and creates movement toward a clear goal. The need for collaboration is also essential for any project and encourages team members to build experience and knowledge together. Although there are many advantages to using software that has been specifically developed to support collaborative learning or project-based learning in a particular domain, any file sharing or communication tools can be used to facilitate CSCL in problem- or project-based environments. Most obviously, the instructor must introduce the CSCL activity in a thoughtful way that contributes to an overarching design plan for the course. The design should clearly define the learning outcomes and assessments for the activity. In order to assure that learners are aware of these objectives and that they are eventually met, proper administration of both resources and expectations is necessary to avoid learner overload. Once the activity has begun, the teacher is charged with kick-starting and monitoring discussion to facilitate learning. He or she must also be able to mitigate technical issues for the class. Lastly, the instructor must engage in assessment , in whatever form the design calls for, in order to ensure objectives have been met for all students. It is the responsibility of the teacher to make students aware of what their goals are, how they should be interacting, potential technological concerns, and the time-frame for the exercise. This framework should enhance the experience for learners by supporting collaboration and creating opportunities for the construction of knowledge. Students who are already comfortable with online communication often choose to interact casually. Mediators should pay special attention to make students aware of their expectations for formality online. Ideally, teachers provide what is called "scaffolding", a platform of knowledge that they can build on. A unique benefit of CSCL is that, given proper teacher facilitation, students can use technology to build learning foundations with their peers. This allows instructors to gauge the difficulty of the tasks presented and make informed decisions about the extent of the scaffolding needed. Instead of only concentrating on the amount and quality of learning outcomes, we need to distinguish between two kinds of effects: For example, the changed quality of problem solving in a team. And he means the word "effects of" more lasting changes that take place when computer-enhanced collaboration teaches students to ask more exact and explicit questions even when not using that system. Applications[edit] It has a number of implications for instructional designers, developers, and teachers. First, it revealed what technological features or functions were particularly important and useful to students in the context of writing, and how a CSCL system could be adapted for use for different subject areas, which have specific implications for instructional designers or developers to consider when designing CSCL tools. Second, this study also suggested the important role of a teacher in designing the scaffolds, scaffolding the collaborative learning process, and making CSCL a success. Third, it is important that a meaningful, real-world task is designed for CSCL in order to engage students in authentic learning activities of knowledge construction. Criticism and concerns[edit] Though CSCL holds promise for enhancing education, it is not without barriers or challenges to successful implementation. Obviously, students or participants need sufficient access to computer technology. Though access to computers has improved in the last 15 to 20 years, teacher attitudes about technology and sufficient access to Internet-connected computers continue to be barriers to more widespread usage of CSCL pedagogy. Furthermore, instructors find that the time needed to monitor student discourse and review, comment on, and grade student products can be more demanding than what is necessary for traditional

face-to-face classrooms. The teacher or professor also has an instructional decision to make regarding the complexity of the problem presented. To warrant collaborative work, the problem must be of sufficient complexity, otherwise teamwork is unnecessary. Also, there is risk in assuming that students instinctively know how to work collaboratively. Though the task may be collaborative by nature, students may still need training on how to work in a truly cooperative process. Others have noted a concern with the concept of scripting as it pertains to CSCL. There is an issue with possibly over-scripting the CSCL experience and in so doing, creating "fake collaboration". Such over-scripted collaboration may fail to trigger the social, cognitive, and emotional mechanisms that are necessary to true collaborative learning. Instructors may be tempted to apply technology to a learning activity that can very adequately be handled without the intervention or support of computers. In the process of students and teachers learning how to use the "user-friendly" technology, they never get to the act of collaboration. As a result, computers become an obstacle to collaboration rather than a supporter of it. During that time, the internet was growing rapidly, which was one of the key factors that facilitated the process. Some of this research focused on more specific areas such as systemic-functional linguistics , humanistic education , experiental learning , and psycholinguistics. For example, in Yu-Ching Chen performed a study to determine the overall effectiveness of wikis in an English as a second language class in Taiwan. In this study, emphasis was placed on the level of grammatical accuracy achieved by the students throughout the course of the task. According to Mark Warschauer , among these are blogs, automated writing evaluation systems, and open-source netbooks. Effectiveness and perception[edit] Studies in the field of computer-assisted language learning CALL have shown that computers provide material and valuable feedback for language learners and that computers can be a positive tool for both individual and collaborative language learning. CALL programs offer the potential for interactions between the language learners and the computer. Juan [43] focuses on new models and systems that perform efficient evaluation of student activity in online-based education. Their findings indicate that CSCL environments organized by teachers are useful for students to develop their language skills. Using CSCL as a tool in the second language learning classroom has also shown to reduce learner anxiety. After a collaborative internet-based project, language learners indicated that their confidence in using the language had increased and that they felt more motivated to learn and use the target language. After analyzing student questionnaires, discussion board entries, final project reports, and student journals, Dooly [45] suggests that during computer supported collaborative language learning, students have an increased awareness of different aspects of the target language and pay increased attention to their own language learning process. Since the participants of her project were language teacher trainees, she adds that they felt prepared and willing to incorporate online interaction in their own teaching in the future. Cultural considerations[edit] Culture may be thought of as composed of "beliefs, norms, assumptions, knowledge, values, or sets of practice that are shared and form a system". Based on social constructivist views of learning, [48] many CSCL environments fundamentally emphasize learning as the co-construction of knowledge through the computer-mediated interaction of multivoiced community members. Students who have learned to learn in an Eastern context emphasizing teacher authority and standardized examinations may perform differently in a CSCL environment characterized by peer critique and co-construction of educational artifacts as the primary mode of assessment. Design implications[edit] A "multiple cultural model" of instructional design emphasizes variability and flexibility in the process of designing for multicultural inclusiveness, focusing on the development of learning environments reflecting the multicultural realities of society, include multiple ways of teaching and learning, and promote equity of outcomes. Constructivist instructional design approaches such as R2D2 [61] which emphasize reflexive, recursive, participatory design of learning experiences may be employed in developing CSCL which authentically engages learners from diverse linguistic and cultural backgrounds. Dyslexia in Computer-Supported Collaborative Learning[edit] History[edit] Dyslexia primarily involves difficulties with reading, spelling and sentence structure, transposition, memory, organization and time management, and lack of confidence. The Americans with Disabilities Act of ADA established that all students with disabilities

must be included in all state and districtwide assessments of student progress. Tools such as spell check or text-to-speech can be helpful to learners with dyslexia by allowing them to focus more on self-expression and less on errors. The proposed framework asks educators to make decisions based on perceived ease of use, perceived usefulness, and system adaptability: This refers to the degree to which a student believes that using the technology is free of effort. This, coupled with clarity and logical flow of functions, makes the learning process easier and the interaction between the user and machine more convenient. Refers to the user experiences and the way in which students are given control over a system to increase confidence and comfort in their learning. In addition to implications for the system, the flow of content shouldb be logical and the tone attitude of content should be encouraging. In some cases, it may be advantageous for the educator to collaborate with an instructional technologist or web designer to ensure guidelines are addressed in the desired learning environment for the CSCL. As more interactive capabilities were added, it evolved into Web 2.

COMPUTER SUPPORT FOR COLLABORATIVE LEARNING: FOUNDATIONS FOR A CSCL COMMUNITY pdf

2: dblp: Computer Supported Collaborative Learning, CSCL

Looking at computer support for collaborative learning (CSCL) in terms of (a) collaborative knowledge building, (b) group and personal perspectives, (c) mediation by artifacts and (d) micro.

Computer-supported collaborative learning Save Computer-supported collaborative learning CSCL is a pedagogical approach where in learning takes place via social interaction using a computer or through the Internet. This kind of learning is characterized by the sharing and construction of knowledge among participants using technology as their primary means of communication or as a common resource. The study of computer-supported collaborative learning draws on a number of academic disciplines, including instructional technology , educational psychology , sociology , cognitive psychology , and social psychology. History Interactive computing technology was primarily conceived by academics, but the use of technology in education has historically been defined by contemporary research trends. The earliest instances of software in instruction drilled students using the behaviorist method that was popular throughout the mid-twentieth century. In the s as cognitivism gained traction with educators, designers began to envision learning technology that employed artificial intelligence models that could adapt to individual learners. Six years later in , the term "computer-supported collaborative learning" was used in a NATO -sponsored workshop in Maratea , Italy. It began quarterly publication by Springer in It is peer reviewed and published both online and in print. Theories The field of CSCL draws heavily from a number of learning theories that emphasize that knowledge is the result of learners interacting with each other, sharing knowledge, and building knowledge as a group. Since the field focuses on collaborative activity and collaborative learning, it inherently takes much from constructivist and social cognitivist learning theories. The second key element is what Vygotsky called the Zone of proximal development. This refers to a range of tasks that can be too difficult for a learner to master by themselves but is made possible with the assistance of a more skilled individual or teacher. Cooperative learning , though different in some ways from collaborative learning, also contributes to the success of teams in CSCL environments. The distinction can be stated as: The five elements for effective cooperative groups identified by the work of Johnson and Johnson are positive interdependence, individual accountability, promotive interaction, social skills , and group processing. Other learning theories that provide a foundation for CSCL include distributed cognition , problem-based learning , group cognition , cognitive apprenticeship, and situated learning. Each of these learning theories focuses on the social aspect of learning and knowledge building, and recognizes that learning and knowledge building involve inter-personal activities including conversation, argument, and negotiation. While researchers, in general, have relied on learning theories developed without consideration of computer-support, some have suggested that the field needs to have a theory tailored and refined for the unique challenges that confront those trying to understand the complex interplay of technology and collaborative learning. The theory suggests that learning is not a matter of accepting fixed facts, but is the dynamic, on-going, and evolving result of complex interactions primarily taking place within communities of people. It also emphasizes that collaborative learning is a process of constructing meaning and that meaning creation most often takes place and can be observed at the group unit of analysis. There are four crucial themes in collaboration theory: Further, these technologies and designs should strive to remove the teacher as the bottleneck in the communication process. In other words, the teacher should not have to act as the conduit for communication between students or as the avenue by which information is dispensed. Finally, collaboration theory-influenced technologies will strive to increase the quantity and quality of learning moments via computer-simulated situations. In his book on "Group Cognition",[13] he provided a number of case studies of prototypes of collaboration technology, as well as a sample in-depth interaction analysis and several essays on theoretical issues related to re-conceptualizing cognition at the small-group unit of analysis. He then launched the Virtual Math Teams project at the Math Forum, which conducted more than 10 years of studies of students exploring mathematical topics

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As a result, computers become an obstacle to collaboration rather than a supporter of it. During that time, the internet was growing rapidly, which was one of the key factors that facilitated the process. Some of this research focused on more specific areas such as systemic-functional linguistics , humanistic education , experiental learning , and psycholinguistics. For example, in Yu-Ching Chen performed a study to determine the overall effectiveness of wikis in an English as a second language class in Taiwan. In this study, emphasis was placed on the level of grammatical accuracy achieved by the students throughout the course of the task. According to Mark Warschauer , among these are blogs, automated writing evaluation systems, and open-source netbooks. Effectiveness and perception Studies in the field of computer-assisted language learning CALL have shown that computers provide material and valuable feedback for language learners and that computers can be a positive tool for both individual and collaborative language learning. CALL programs offer the potential for interactions between the language learners and the computer. Juan[43] focuses on new models and systems that perform efficient evaluation of student activity in online-based education. Their findings indicate that CSCL environments organized by teachers are useful for students to develop their language skills. Using CSCL as a tool in the second language learning classroom has also shown to reduce learner anxiety. After a collaborative internet-based project, language learners indicated that their confidence in using the language had increased and that they felt more motivated to learn and use the target language. After analyzing student questionnaires, discussion board entries, final project reports, and student journals, Dooly[45] suggests that during computer supported collaborative language learning, students have an increased awareness of different aspects of the target language and pay increased attention to their own language learning process. Since the participants of her project were language teacher trainees, she adds that they felt prepared and willing to incorporate online interaction in their own teaching in the future. Cultural considerations Culture may be thought of as composed of "beliefs, norms, assumptions, knowledge, values, or sets of practice that are shared and form a system". Based on social constructivist views of learning,[48] many CSCL environments fundamentally emphasize learning as the co-construction of knowledge through the computer-mediated interaction of multivoiced community members. 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multicultural realities of society, include multiple ways of teaching and learning, and promote equity of outcomes. Constructivist instructional design approaches such as R2D2[61] which emphasize reflexive, recursive, participatory design of learning experiences may be employed in developing CSCL which authentically engages learners from diverse linguistic and cultural backgrounds. Dyslexia in Computer-Supported Collaborative Learning History Dyslexia primarily involves difficulties with reading, spelling and sentence structure, transposition, memory, organization and time management, and lack of confidence. The Americans with Disabilities Act of ADA established that all students with disabilities must be included in all state and districtwide assessments of student progress. Tools such as spell check or text-to-speech can be helpful to learners with dyslexia by allowing them to focus more on self-expression and less on errors. The proposed framework asks educators to make decisions based on perceived ease of use, perceived usefulness, and system adaptability: This refers to the degree to which a student believes that using the technology is free of effort. This, coupled with clarity and logical flow of functions, makes the learning process easier and the interaction between the user and machine more convenient.

COMPUTER SUPPORT FOR COLLABORATIVE LEARNING: FOUNDATIONS FOR A CSCL COMMUNITY pdf

3: Computer-supported collaborative learning - EduTech Wiki

The relationship between collaboration processes, task strategies and the use of the tools and resources that the computer environment offers, may be crucial for the effects of computer supported collaborative learning.

Our way to Taipei: Based on an analysis of conference proceedings, lists of participants and lists of program committee members, this paper provides insights about the development of the CSCL community Based on an analysis of conference proceedings, lists of participants and lists of program committee members, this paper provides insights about the development of the CSCL community in its first decade. A focus is set on the continuity of active and passive membership, the geographical distribution and the international connectivity of the community. Contrary to our expectations, only a relatively small number of people participate continuously in the community. Concerning the geographical distribution we found that the community is increasingly international in conference participation, authors, and program committees. The international connectivity of the community is also increasing which can be seen in a growing number of citations and co-authorships across different countries. These results can serve as a basis for further cultivation of the CSCL community. Show Context Citation Context In this paper we present an analysis of the CSCL community and its development over the past ten years. We are interested in whether the community coalesces or is a set How to support groups in learning: More than problem solving. The main thesis developed in this chapter is that in order to make progress in managing network-based group collaboration by means of more or less intelligent IT, a broad concept of what makes groups function needs to be at the basis. In reviewing some of the current collaboration manageme In reviewing some of the current collaboration management tools, it is concluded that these are often very good in supporting the problem-solving function of groups. Other functions of groups have been identified in psychological and organisational research and some of the more important findings are reported. Building on an extensive knowledge base that results from many years of experience with group learning forms in classrooms [1, 2] as well as from theory building and research contributions [3], the e-learning Show Context Citation Context In particular, Internet technology has been employed for group learning in various forms [e. For groups to realize their potential as a learning resource, more needs to be done than just Scientific communities can be seen as a specific type of Communities of Prac-tice CoP. In this paper we analyze scientific communities from the CoP point of view. We show how models and design principles from CoP can be interpreted and adapted for scientific communities. Taking the CSCL Computer-Supported Collaborative Learning community as an example, we instantiate the adapted design principles and trace the development of this community based on an analysis of its first decade of existence This analysis includes an analysis of CSCL conference proceedings and an analysis of the lists of participants and program committee members of CSCL confer-ences. All together we includeds artifacts e. Conception and implementation of rich pedagogical scenarios through collaborative portal sites [to appear in a book with ICOOL 03 contributions title to be defined , Senteni, A. Publisher to be defined] Publisher to be defined] Powered by:

COMPUTER SUPPORT FOR COLLABORATIVE LEARNING: FOUNDATIONS FOR A CSCL COMMUNITY pdf

4: Computer Support for Collaborative Learning: Foundations for a Cscl - Google Books

Computer Support for Collaborative Learning (CSCL) is a field of study centrally concerned with meaning and the practices of meaning-making in the context of joint activity, and the ways in which these practices are mediated through designed artifacts.

About this article at springerlink. In a typical CSCL setting, artifacts can play multiple pivotal roles: Technological artifacts like web apps can provide communication media that support collaboration. Further, they may structure the representations that groups of students use in building their intersubjective knowledge, making it visible, shared and persistent. Instructional artifacts presenting domain topics, lessons, guidance, scaffolding or scripting may supply motivation and direction to the collaborative efforts. In addition, the group efforts may be oriented toward co-construction of an artifact: Finally, the CSCL process may result in such a knowledge artifact, as the group product. CSCL researchers can study the use of artifacts by student groups to see how collaborative learning takes place and to judge its success. They can observe how artifacts mediate the communicationâ€”whether synchronous, asynchronous, face-to-face, textual and so on. They can see how the groups enact the representational guidance and use it to structure their shared understanding of their goals and the co-construction of their knowledge. They can observe the evolution of collaboratively generated artifacts to track processes of productive group interaction. Moreover, CSCL researchers themselves make use of artifacts and produce their own knowledge artifacts. While CSCL research involves many activities designing innovative technologies, intervening in classrooms, analyzing data, teaching theories, etc. We also present two papers that mine the corpus of CSCL publication artifacts for indications of the nature of our research field. A few years later, he clarified what he thought distinguished CSCL from earlier approaches: CSCL research has the advantage of studying learning in settings in which learning is observably and accountably embedded in collaborative activity. By this standard, a study that attempted to explicate how learners jointly accomplished some form of new learning would be a case of CSCL research, even if they were working in a setting that did not involve technological augmentation. On the other hand, a study that measured the effects of introducing some sort of CSCL application on learning defined in traditional ways would not. CSCL is a research community that produces papers centrally concerned with intersubjective meaning and the practices of meaning making as joint activity, and how best to design CSCL artifacts to mediate these practices. This definition incorporates a number of points: CSCL research is not defined by a set of fixed attributes, but by the work of an international community, whose focus shifts over time as its established understanding evolves. The nature of the community is externalized in the corpus of its publications. The meaning may be projected by the original designers of the artifact into the form of the artifact, but it must also be enacted by the users of the artifact. Creation of meaning is a social process, in which the meaning is necessarily intersubjectively defined. Meaning is not created in the mental processes of an individual, but in joint activity, typically in accordance with established social practices. This is why learning in CSCL settings can be observable and understandable to researchersâ€”without looking inside the learners. CSCL research is both a theoretical enterprise, concerned with how groups make meaning, and a design endeavor, concerned with how to design artifacts of collaboration media, representational guidance, group interaction and pedagogical approaches to promote collaborative learning. In other words, a paradigm-shaping research question for CSCL would treat learning as essentially an intersubjective, interactional process, and would study it by investigating the dynamic developmental processes through which individual, small-group and community cognitive practices emerge. We can summarize this by saying that a post-cognitive approach to CSCL should be: Having noted some ways in which artifacts are central to CSCL, let us now see how the papers in this issue advance our understanding of CSCL artifacts. Through her focus on how a group is oriented to co-constructing its final artifact, she sheds new light on these three distinct phenomena as components of computer-supported collaborative learning. The group interaction is analyzed in terms of its

potential productivity. This provides a framework for analyzing and even judging the interaction: One can then analyze how the interaction works to contribute to evolving the discussion and the successive drafts of the report that the team must present. In the past, analysis of interaction tried to discover generic discourse forms or to code the discourse for various categories of utterances. Here, the objective of producing a report provides a specific, grounded basis for the analytic approach. Accordingly, productive interaction is interaction that potentially at least contributes to the group production of its target object. This objective is largely proposed from outside the group interaction. In the particular case analyzed, it is provided by a university course and the companies associated with the course. However, it is up to the student groups to interpret, refine or enact precisely what their problem or goal is. As they work on their knowledge object, they learn more about it and clarify just what problem they are pursuing. Thereby, the knowledge artifact mediates the interaction even as it emerges as a product of that interaction. Notably, the knowledge is not a mental phenomenon, but a material artifact, physically and jointly observable as persistent text, which, however, evolves over time through drafts. Setting a goal, deciding how to pursue it, keeping on track and concluding when the goal has been accomplished is part of what is known as agency. The notion of shared epistemic agency is perhaps the most interesting of the layers discussed here. As reviewed by Emirbayer and Mische , agency has historically been associated with individuals. However, the definition they develop could apply equally to group agency or even community agency. Given a dynamic notion of group agency, one can analyze in excerpts of productive interaction exactly how a group negotiates, reflects upon and carries out its action objectives. This does not necessarily involve a rationalist sub-goal hierarchy, but can include group members orienting the group in various subtle ways toward projected joint goals and reminding the group of objectives articulated in the past. Like knowledge, agency is here conceived as observable in the interaction, rather than as a hypothetical psychological state. Furthermore, the concept of agency can be applied to artifacts as well. Designed artifacts exercise a referred agency, designed into the form of the artifact by the intentions of the designerâ€”and visible in that form. A software developer embeds certain goals in the software, which determine to some extent how it can and cannot be used. Thereby, the interaction that takes place can be viewed as an inter-action among many sources of agency, coming together in a concrete and unique situation formed by that agentic confluence. The document drafts produced by the groups are conceptualized here as knowledge objects. The study concludes that increases in the discourse about these textual objects lead to improvements in learning or better knowledge building. However, the study does not reflect upon the advantages of the affordances of literary text over verbal discourse for the development of complex ideas. Written language has powerful knowledge-building affordances, as seen in the difference between oral and literate cultures Ong, Issues of idea organization outline , structure sentence and paragraph and conceptualization choice of words become explicit in the translation from verbal discourse to report construction. Persistence, shared attention, longer sequences and other affordances of literary texts make huge differences as vague objectives become refined artifacts. Materialization and objectification facilitate co-authors building on each other through multiple drafts and edits. Bringing Artifacts into Use Technological artifacts are not simply present to users with fixed attributes; they must be enacted by the users through specific ways that the users discover for making use of them. Kirschner in their analysis of a dyad of students using a form of planning software. There are many similarities between the first two studies in this issue. They both adopt and advance the dialectical, interactional and dynamic paradigm of CSCL research. They explore the processes of enacting by observing the details of interaction and tracking processes of group practices. There are also striking contrasts between the two studies, notably in the very different level of maturity of the students and the span of time given for their interactions. Of particular methodological interest is the way the second paper analyzes enactment. It compares the practices of the group before and after the artifact is introduced. It adopts a design-based research perspective by looking at successive iterations of an instructional intervention: In this case, the artifact is a software medium for inscribing steps in a planning process. Initially, the student dyads simply transferred steps from their instructions into a generic spreadsheet. Given the

introduced software support, they then figured out a way to arrange the given steps within the new format. One can well ask the same question here as with the first study: How is the medium for co-constructing knowledge objects designed to support the collaborative knowledge-building goals? Here, a sophisticated application is suddenly inserted into the instructional setting. We are not told where this medium came from or what its design objectives were. What were the referred intentions contributing to the resistance of its material agency? It is not presented as part of a design-based research integration of iterations of software development with classroom trials, data analysis and theory refinement. Instead of simulating, evaluating and revising planning decisions, they stick with the specification and following the order of the assignments as they are presented in the syllabus. To them, this is an acceptable solution to the planning problem. The student practices changed, but not necessarily in the ways intended by the intervention facilitators or the artifact designers. What are the implications of the analysis of how the students enacted the software for redesigning that medium of inscription? Are they part of a paradigm shift within the learning sciences that was anticipated in the mids, but has been slow to materialize, or are they simply examples of one approach among many unrelated methodological fashions? More recently, Lonchamp a tried to map changes in the field through computational analysis of ijCSCL content. Now, we have two new energetic examinations of the CSCL literature. The first of these is a report from an on-going effort by Heisawn Jeong,Cindy E. The report clearly represents significant work gathering, filtering and analyzing publications. It applies a large number of interesting analyses, combining automated and manual examination in order to explore various relevant issues. It dissects and categorizes hundreds of empirical CSCL papers along multiple dimensions: The discussion in the report reflects a deep understanding of relevant issues for analyzing the CSCL corpus and attempts to avoid potential biases. Yet, when one views the specific findings of the analysis or even scans the list of papers selected as representative of CSCL journal articles during the time period, one is struck by the low number of publications by well known CSCL researchers and of papers that show up in lists of most often cited or most frequently downloaded articles. Are the items that made it through the selection and filtering process the most influential CSCL publications of the period, or are they, rather, primarily archival reports of uncontroversial experimental confirmations of generally accepted findings? For instance, given the papers in the present issue of ijCSCL, which of these papers would be included in the final list if the study were extended to ? Would it be clear within the selection method that the first two papers report stages of larger design-based research efforts and that they systematically focus on practices and group processes rather than on individual learning outcomes? More abstractly, they can be considered to be exemplars of research approaches in a distinctively CSCL paradigm that is post-cognitive. One would like to know if there has been a general paradigm shift in this direction from to the present. What kind of analysis of the literature would be necessary to determine this? The findings of the reported analysis suggest that post-cognitive approaches were not prominent in the selected sample.

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5: ijCSCL :: International Journal of Computer-Supported Collaborative Learning

Taking the CSCL (Computer-Supported Collaborative Learning) community as an example, we instantiate the adapted design principles and trace the development of this community based on an analysis of its first decade of existence ().

Below are just 2 examples many more are needed Construction of arguments leads to interesting cognitive processes e. However, "Two wrongs can not make right". Typically, one can observe erroneous, lacking or heteogeneous application of mental scripts. The working hypothesis of this kind of research is that a computer-supported "learning script" could enhance argumentation quality in discussion and individual knowledge on argumentation, then lead to deeper processing of learning material and finally to better learning. In other terms collabortive scrips can extend zones of proximal development, e. Scripts should both change observable behavior and cognitive behavior. Collaboration scripts may lead to an alternative orchestration of argument in discourse, and consequently of cognitive processes. Therefore central to this kind of CSCL research are collaboration scripts: Action programs that activate or assign roles and activities associated to these roles, that help individuals to understand and to act in specific collaborative situations in part: Schank and Abelson, See computer-supported argumentation for more discussion. Through intensive collaboration and peer interaction, resources of the whole learning community may be used to facilitate advancement of inquiry. However, new computersupported learning environments emerging from cognitive research promise to facilitate participation in these higher- level processes of inquiry in education. Successful collaborative learning relies on effective interaction of learners. However, when learners are left to their own devices, they rarely engage in asking each other questions, explaining and justifying their opinions, articulating their reasoning, or elaborating and reflecting upon their knowledge. Collaboration scripts aim to support these learning activities by structuring otherwise deficient interaction. For instance, the "restaurant script" informs us what to do and to expect when we go to a restaurant, the roles we and other participants play, and the sequence in which all events are supposed to take place. Similar to the "restaurant script", collaboration scripts can guide the learners in what to do in the learning task, the roles they play, as well as the sequence of activities to engage in. Since then, this approach of what they called "scripted cooperation" has been adopted by many researchers and educators in the field of computer-supported collaborative learning CSCL and produced a wide range of innovative yet non-generic script examples. Allan Jeong, Florida State University. This list includes mostly other tools e. LMSs, Portals, collaborative office and drawing tools, etc. Difficult to get, available but maybe not working or no longer maintained, etc. Unlike in other domains of research in edutech, CSCL programs are usually not distributed. Besides the paradox that people working on collaboration are not interested in commons, it may have to do with the research-orientation of this subfield, i. Knowledge Practices Environment not sure if this is still maintained, Collage , an editor that implements design with collaborative learning flow patterns difficult to find, S-COL Wecker, is a Greasemonkey script. Otherwise, the whole range of social science research methodology is used, depending on what subject is studied. There also exist instructional design methods , such as Kirschner six-stage procedure. This disparity is referred to as the digital divide. By definition, a CSCL artifact conveys some pedagogical intent, which requires that learners use it more or less as anticipated by its designers. A first approach to deal with this dilemma is to avoid associating a particular way of using the artifact with the pedagogical intent. Structures emerge over time from situated practice. As discussed in detail below, this orientation is highly demanding for both learners and institutions. An already well-established research stream aims at building intelligent agents for playing that role or, at least, for assisting human tutors Magnisalis et al. At the other extreme, rules are automatically enforced. But, many users are reluctant to use such systems, and often find inventive ways to circumvent the rules e.

6: Computer-supported collaborative learning | Revolvy

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The Computer Support for Collaborative Learning (CSCL) DVD contains nearly four hours of video presentations by leading experts in the field. The video was filmed during the international CSCL conference in Boulder Colorado.

7: Computer-supported collaborative learning - Wikipedia

2. Computer Support for Collaborative Learning: foundations for a CSCL community: proceedings of CSCL Boulder, Colorado, USA January , 2. Computer Support for Collaborative Learning: foundations for a CSCL community: proceedings of CSCL Boulder, Colorado, USA January

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