

Activity theory – getting the boot straps.

The following articles were chosen from the CHAT literature to cover facilitation, collaboration, and how these things effect the learning environment. It is not comprehensive, but is rather representative, and chosen as a first set of articles to read in our effort to learn more about the conceptual foundations that CHAT offers us in our areas of research.

The list has been prepared by Greg Whymark and Louise Hawkins.

In due course the endnotes data base will be extended, and these databases will also be shared.

In the mean time, the papers listed below are all held in hard copy form at Group SolutionS, and the web references are given in the reference.

Reference Type: Report

Record Number: 22

Author: Burge, J. D.

Year: 2003

Title: Developing a cognitive model for collaboration

Institution: Application for SIGCSE 2003

Label: Full Text

Abstract: Cooperative work within groups has many implications for communities [3]. The main implication is that we better understand group collaboration and the context(s) in which it occurs. Understanding group collaboration gives us insight into an individual's mental and physical processes employed in accomplishing group tasks. Physical processes are certainly important as they refer to those tools required to carry out a task. Analyzing the mental processes that support work allows us to better design collaborative systems. If we can design models that encourage collaboration and, creativity, we have succeeded in the true sense of human-computer interaction.

URL: <http://csgrad.cs.vt.edu/~jaburge/DC.html>

Reference Type: Book Section

Record Number: 25

Author: Chang, J.

Year: 2002

Title: The role of the teacher

Book Title: Teacher Scholars' Reflections

City: San José, California

Publisher: San José State University

Label: Full Text

Abstract: As a professor of education at SJSU, I continually play several roles: I am an instructor striving to teach effectively, a researcher advancing knowledge and theory in education, and a contributor to professional communities at the campus, local, state, national, and international levels. At times, balancing such roles proves challenging; nevertheless, my multiple responsibilities provide me with wonderful

opportunities to participate in culturally meaningful and productive activities. Moreover, there is a deep unity linking my varied professional roles: my field-based research agenda, my classroom teaching, and my service activities overall reflect one central theme of professional development for responsive teaching and active learning. My experience as an SJSU Teacher Scholar resonated deeply with this theme.

URL: http://cfds.sjsu.edu/tsbook/ref_chang.htm

Reference Type: Journal Article

Record Number: 20

Author: Clases, C.; Wehner, T.

Year: 2002

Title: Steps across the border - Cooperation, knowledge production and systems design

Journal: Computer Supported Cooperative Work: The Journal of Collaborative Computing. Special Issue of CSCW on activity theory and design

Volume: 11

Issue: 1-2

Label: Full Text

Abstract: The computer support of cooperation and knowledge production across socially distributed activity systems has become an important topic in the context of the discourse on "knowledge management". The present article will draw on concepts of cultural-historical activity theory to discuss the problem of how the notion of "knowledge" is conceptualized and implicitly implemented in computer systems to support knowledge management, often neglecting the social embeddedness of knowledge production in everyday work practices. From the point of view of cultural-historical activity theory we would propose to look upon the generation of knowledge as a process embedded in socially distributed activities that are constantly being reproduced and transformed in and between specific communities of practice. We will present a model of cooperation that relates processual and structural aspects of joint activity. Methodologically, it draws on the analysis of unexpected events in the course of joint activity. Our model also proposes to use forums for co-construction to make visible different perspectives in the process of software design. The concept of cooperative model production is highlighted as a means to mediate, not to eliminate, differences of perspectives involved in the course of systems design. An empirical example will be given in which the repertory-grid technique is used to visualize similarities and differences of potential users' viewpoints and requirements in early stages of systems design.

URL: <http://www.ics.uci.edu/~redmiles/activity/final-issue/Clases/Clases.pdf>

Reference Type: Journal Article

Record Number: 21

Author: Collins, P.; Shukla, Shilpa; Redmiles, D.

Year: 2002

Title: Activity theory and system design: A view from the trenches

Journal: Computer Supported Cooperative Work: The Journal of Collaborative Computing. Special Issue of CSCW on activity theory and design

Volume: 11

Issue: 1-2

Label: Full Text

Abstract: An activity theory model and a mediating artifacts hierarchy were employed to help identify the needs for tools for customer support engineers who documented solutions to customer problems, a knowledge authoring activity. This activity also involves customer support engineers who assist Hewlett-Packard software product users. The particular tools to be designed were knowledge-authoring tools embedded in the customer support tracking application suite, SupportTracker.1 The research analyzed the role of tensions between the elements of Engeström's activity theory model. The research also explored the benefits of specific interpretations of Engeström's refinement of Wartofsky's mediating artifacts hierarchy. The hierarchy contributed to the identification of desired characteristics of mediating artifacts, particularly tools. The findings included an interpretation of the "where-to" artifact concept as supporting an understanding of the entire activity system as an evolving entity. Specific interventions were used to achieve a positive impact on the evolution of the activity system.

URL:

<http://citeseer.nj.nec.com/cache/papers/cs/14668/http:zSzzSzwww.ics.uci.eduSzpubzSzedenzSzpaperszSzjournalszSz2000zSzscwzSzscw2000.pdf/collins00activity.pdf>

Reference Type: Electronic Source

Record Number: 15

Author: Decortis, F.; Noirfalise, S.; Saudelli, B.

Title: Activity theory as framework for cooperative work

Access Year: 2003

Access Date: 3rd December

Label: Full Text

Abstract: The origin of this concept can be found in the early writings of Lev Vygotsky (1896-1934), who suggests that socially meaningful activity may serve as an explanatory principle in regard to, and be considered as a generator of, human consciousness. The most important event in the history of the concept of activity occurred in the mid-1930s when a group of Vygotsky's disciples (notably Alexei Leontiev) came up with a "revisionist" version of activity theory that put practical (material) actions at the forefront while simultaneously playing down the role of signs as mediators of human activity.

URL: <http://www-sv.cict.fr/cotcos/pjs/TheoreticalApproaches/Activity/ActivitypaperDecortis.htm>

Reference Type: Electronic Source

Record Number: 16

Author: Decortis, F.; Noirfalise, S.; Saudelli, B.

Title: Distributed cognition as framework for cooperative work

Access Year: 2003

Access Date: 3rd December

Label: Full Text

Abstract: Distributed cognition is a new branch of cognitive sciences. On one part, its goal is to study representations of knowledge internal and external to the individual. On the other part, it is interested in the propagation of knowledge between the

individuals, and the artifacts, and the transformations sustained by structures when used by individuals and artifacts. This new approach allows to study cognitive phenomenon non observable at the individual level, such as cooperative work socially distributed task.

URL: <http://www-sv.cict.fr/cotcos/pjs/TheoreticalApproaches/DistributedCog/DistCognitionpaperDecor-tis.htm>

Reference Type: Conference Proceedings

Record Number: 3

Author: Diaz-Kommonen, L.

Year of Conference: 2002

Title: Activity theory and design method

Conference Name: CIPHER partners

Conference Location: Helsinki, Finland

Date: June 17th

Label: Full presentation

Abstract: Activity Theory is a framework of knowledge that seeks to explain the unity and inseparability of doing and thinking. It does so by focusing on the idea of the indivisibility of human organism from the environment, of the individual and society. According to the theory, a basic feature of human activity is the use of mediation.

That is, human interaction with the world is mediated either by material tools or by immaterial signs. While concepts such as mediation remain highly abstract, Activity Theory has served as a platform from which to develop models that allow for systemic analysis of human activity.

URL: http://cipher.uiah.fi/download/presentations/activity_theory

Reference Type: Journal Article

Record Number: 17

Author: Fijeld, M.; Lauche, K.; Bichsel, M.; Voorhorst, F.; Krueger, H.; Rauterberg, M.

Year: 2002

Title: Physical and virtual tools: Activity theory applied to the design of groupware

Journal: Computer Supported Cooperative Work

Volume: 11

Pages: 153-180

Label: Full Text

Abstract: Activity theory is based on the concept of tools mediating between subjects and objects. In this theory, an individual's creative interaction with his or her surroundings can result in the production of tools. When an individual's mental processes are exteriorized in the form of tools - termed objectification - they become more accessible to other people and are therefore useful for social interaction. This paper shows how our understanding of activity theory has shaped our design philosophy for groupware and how we have applied it. Our design philosophy and practice is exemplified by a description of the BUILD-IT system. This is an Augmented Reality system we developed to enhance group work; it is a kind of graspable groupware which supports cooperative planning. The system allows a group

of people, co-located around a table, to interact, by means of physical bricks, with models in a virtual three-dimensional (3D) setting. Guided by task analysis, a set of specific tools for different 3D planning and configuration tasks was implemented as part of this system. We investigate both physical and virtual tools. These tools allow users to adjust model height, viewpoint, and scale of the virtual setting. Finally, our design practice is summarized in a set of design guidelines. Based on these guidelines, we reflect on our own design practice and the usefulness of activity theory for design.

URL:

<http://citeseer.nj.nec.com/cache/papers/cs/15250/http:zSzzSzwww.fjeld.chzSzpubzSzCSCW.pdf/physical-and-virtual-tools.pdf>

Reference Type: Conference Proceedings

Record Number: 18

Author: Halloran, J.; Scaife, M.; Rogers, Y.

Year of Conference: 2002

Title: Taking The 'No' Out Of Lotus Notes: Activity Theory, Groupware, and Student Groupwork

Conference Name: CSCL '02, International Conference on Computer-supported Collaborative Learning

Conference Location: Boulder, Colorado

Pages: 169-178

Label: Full Text

Abstract: This paper describes a study that examined why groupware that was tailored to support collaborative student learning (Lotus Notes) was unsuccessful. In particular, it examines why the tutors' aspirations of helping the students to collaborate were not met. It was found that students tended not to use the groupware, preferring other, self-developed support tools. Our study shows that the failure was multidetermined: there was a complex interacting set of factors including software use problems, systems integration issues, conflicting tutor/student perceptions of the value of using the groupware, and conflicts in each group's view of how best to complete the course. There has been interest in using Activity Theory to approach multidimensional analysis in CSCL, but existing Activity Theory-based frameworks can be difficult to apply to instances of collaborative learning marked by conflict. To address this need, we use an Activity Theory-based analytic tool called the Activity Space. The tool is also used to show how multiple changes could be made to improve the potential for groupware to be used as intended.

URL: <http://www.cogs.susx.ac.uk/users/johnhall/CSCL.pdf>

Reference Type: Electronic Source

Record Number: 12

Author: Halverson, C. A.

Year: 2001

Title: Activity theory and distributed cognition

Access Year: 2003

Access Date: 27th November

Label: Full Text

Abstract: Activity theory (AT) is one of the many theories and approaches being used in CSCW, and the range of papers in this issue illustrates its popularity.

Indirectly, they also indicate what researchers are looking for from a theory. They describe 'native' cooperative phenomena (Nardi, Whittaker, and Schwarz; Zager) as well as computer support for (cooperative) work (Miettinen and Hasu; Spasser). Some use the theory for meta-level analyses based on theoretical precepts. Barthelme and Anderson use AT to compare Process Centered Software Development Environments (PCSDE) while Korpela, Mursu, and Soriyani examine AT driven Information Design itself. Several papers push AT by developing models to extend the theory (Clases and Wehner), or defining new phenomena (Nardi et al. and Zager). Finally, some take a practical bent by addressing design (Fjeld, Lauche, Bichsel, Voorhorst, Krueger, and Rauterberg; Miettinen and Hasu). The fact that papers are mentioned more than once, and in different categories, is not surprising. The range of uses illustrates a broader issue in CSCW. We appropriate theories and methodologies from other fields. Can we continue to satisfy our analytical needs in this way?

Notes: Submitted for Special Issue of Journal of Computer Supported Cooperative Work on Activity Theory

URL: <http://www.research.ibm.com/SocialComputing/Papers/CAH1.pdf>

Reference Type: Journal Article

Record Number: 26

Author: Helle, M.

Year: 2000

Title: Disturbances and contradictions as tools for understanding work in the newsroom

Journal: Scandinavian Journal of Information Systems

Volume: 12

Pages: 81-114

Label: Full Text

Abstract: Understanding what really happens in workplaces has become a central issue for the emerging cooperative methods of designing information systems. It is not enough to rely on the descriptive observations (Jordan, 1993) or on normative accounts of work (Button & Harper 1996). It is necessary to find out how the work gets done and what the work practices are in the lived, everyday life of the workplace. For that purpose, drawing from the field of activity theory and developmental work research, the author describes how the work of journalists was studied in a Finnish national daily newspaper, after the implementation of a new pagination system. The tools developed for analyzing and reflecting on work include a systemic analysis of the disturbances in the work practice. The analysis of disturbances suggests that only a part of the work of the newsroom complies with the notion of traditional journalism: an individual reporter writing news stories. The article looks at journalism as a part of an activity system, as a collaborative work process and a contested field of negotiations between different actors, owners, managers, journalists, systems and production departments, printing plants as well as advertisers and readers. Disturbances indicate the existence of contradictions, persistent tensions in the activity. Tensions appear in connection with deciding what the content of the newspaper should consist of, how the work of the newsroom should be organized and the flow of the production process controlled.

URL: http://iris.informatik.gu.se/sjis/magazine/vol12no1/4-MH_p81-114.PDF

Reference Type: Conference Proceedings

Record Number: 11

Author: Iivari, J.; Linger, H.

Year of Conference: 1999

Title: Knowledge work as collaborative work: Situated activity theory view

Conference Name: 32nd Hawaii International Conference on System Sciences

Conference Location: Hawaii

Label: Full Text

Abstract: The paper proposes a Situated Activity Theory view of collaborative knowledge work. Activity Theory is argued to be particularly relevant in the context knowledge work since the body of knowledge is a historically accumulated social construction. Situated Activity Theory makes a distinction between activity, tasks and encounters, the first two following the traditional distinction between activity and action in Activity Theory. Encounters are incorporated to model explicitly the temporal organisation of work. Referring to the high variety of knowledge work, Situated Activity Theory suggests an instantiation process in which an activity is instantiated into an action working on a single object of work. The culturally developed activity system is seen to serve as a significant resource and constraint in the process. Influenced by the ideas of situated action the instantiation process is viewed as continuous process that takes place in a close concert with the action as it unfolds.

URL: <http://www.computer.org/proceedings/hicss/0001/00011/00011018.PDF>

Reference Type: Conference Proceedings

Record Number: 9

Author: Kaptelinin, V.; Nardi, B.

Year of Conference: 1997

Title: Activity theory: Basic concepts and applications

Conference Name: Computer Human Interaction Conference

Conference Location: Atlanta, Georgia

Date: 22-27 March

Label: Full Text

Abstract: This tutorial introduces participants to Activity Theory, a conceptual approach that provides a broad framework for describing the structure, development, and context of computer-supported activities. The tutorial will consist of lectures, discussion and small group exercises. A Web community will be established so attendees will be able to continue to learn about and use activity theory.

URL: <http://www.acm.org/sigchi/chi97/proceedings/tutorial/bn.htm>

Reference Type: Magazine Article

Record Number: 5

Author: Kaptelinin, V.; Nardi, B.; Macaulay, C.

Year: 1999

Title: The activity checklist: A tool for representing the "space" of context

Magazine: Interactions

Volume: 6

Issue Number: 4

Pages: 27-39

Date: July & August

Label: Full Text

Abstract: In recent years, specialists in human–computer interaction (HCI) have come to appreciate the importance of understanding the context in which computer-supported activities take place [1]. Such understanding directly affects design and evaluation by revealing what users are up to and how they might most effectively use a technology. The idea is to gain this understanding before the design process has progressed too far, or during evaluation, when openings for modifications and improvements to the technology exist .

URL: <http://delivery.acm.org/10.1145/310000/306431/p27-kaptelinin.pdf?key1=306431&key2=5443289601&coll=GUIDE&dl=ACM&CFID=14461048&CFTOKEN=79354107>

Reference Type: Electronic Source

Record Number: 13

Author: Kipp, N. A.

Year: 1996

Title: Overview of activity theory

Access Year: 2003

Access Date: 27th November

Last Update Date: November 24th 1996

Label: Full Text

Notes: Slide presentation

URL: <http://ei.cs.vt.edu/~cs5724/g5/activity.html>

Reference Type: Conference Proceedings

Record Number: 14

Author: Korpela, M.; Mursu, A.

Year of Conference: 2003

Title: Means for cooperative work and activity networks: An analytical framework

Conference Name: Workshop on Applying Activity Theory to CSCW research and practice at ECSCW'03

Conference Location: Helsinki

Date: 14th September

Label: Full Text

Abstract: We present a model that links together individual actions, cooperative activities and activity networks, identifying three categories of means, respectively – means of work, means of cooperation and coordination, and means of networking. Finally we discuss the contribution of this framework for CSCW theory and practice.

URL: <http://www.uku.fi/atkk/actad/ecscw2003-at/korpela-et-mursu.pdf>

Reference Type: Journal Article

Record Number: 8

Author: Korpela, M.; Muru, A.; Soriyan, H. A.

Year: 2001

Title: Information systems design as an activity

Journal: Accepted to the CSCW Journal, Special issue on Activity Theory and Design.

Label: Full Text

Abstract: Activity theory has inspired a number of theoretical reflections on what information systems (IS) and information systems development (ISD) are about (e.g., Bertelsen 2000; Bødker 1991; Bødker 1997; Bødker and Petersen 2000; Hasan et al. 1998; Kuutti 1991; Nardi 1996). In this paper we carry on that tradition by applying activity analysis and activity network analysis on ISD as a work activity.

Notes: submitted on 18 February 2001.

URL: <http://www.ics.uci.edu/~redmiles/activity/final-issue/Korpela/Korpela.doc>

Reference Type: Conference Proceedings

Record Number: 7

Author: Mørch, Anders; Høyland, Ane; Omdahl, Karianne; Åsand, Hege-René

Year of Conference: 2001

Title: Intervention Strategies in Groupware-mediated Interaction

Conference Name: ECSCW 2001

Conference Location: Bonn

Series Title: Workshop on Learning Groups: The role of learning processes in evolutionary implementation of groupware.

Date: September 16th

Label: Full Text

Abstract: This paper takes as starting point our experiences with two ongoing projects: DoCTA NSS (Design and use of Collaborative Telelearning Artifacts – Natural Science Studios and From Chaos to Knowledge. Both projects are carried out by two multidisciplinary teams at the Universities of Oslo and Bergen in Norway. Through studying secondary school pupils and their use of information and communication technology (ICT) in the classroom, we address the following issues: 1) the teacher as facilitator, 2) software agents as facilitator, and 3) the distribution of collaboration support between computers and pupils.

URL: <https://doc.telin.nl/dscgi/ds.py/Get/File-16215>

Reference Type: Conference Proceedings

Record Number: 1

Author: Mwanza, D.

Year of Conference: 2000

Title: Mind the gap: Activity theory and design

Conference Name: CSCW2000

Conference Location: Philadelphia

Date: December 2-6

Label: Full Text

Abstract: This paper describes the application of the Activity Theory framework to the analysis of work practices in an organisation, to inform the design of a computer system for supporting collaborative learning in the workplace. A study involving the analysis of an organisation and using Engeström's expanded triangle model of human activity [5] is described. A methodology developed during the study for breaking down the extended triangle and applying it is given, together with practical examples.

The paper concludes by highlighting strengths and weaknesses of the model, and suggests a number of refinements for its practical application.

URL:

<http://citeseer.nj.nec.com/cache/papers/cs/21273/http:zSzzSzkmi.open.ac.ukzSztrzSzp aperszSzkmi-tr-95.pdf/mwanza00mind.pdf>

<http://citeseer.nj.nec.com/mwanza00mind.html> then select PDF

Reference Type: Journal Article

Record Number: 24

Author: Nardi, B.

Title: Coda and response to Christine Halverston

Label: Full Text

Abstract: Many thanks to Christine Halverston for an incisive, original discussion of theorizing in CSCW. In reading Halverston's discussion of activity theory and distributed cognition, I was struck by the common angst shared by all of us with theoretical inclinations who attempt to interest others in developing perspectives beyond seat of the pants analysis. As a community of designers and researchers, we teeter between wanting to just hunker down and get something done—design—and striving to find satisfying theoretical frames that help us understand more deeply what people and technology are about.

URL: <http://www.ics.uci.edu/~redmiles/activity/final-issue/Response/Response.pdf>

Reference Type: Journal Article

Record Number: 19

Author: Tolman, C. W.

Year: 1988

Title: The basic vocabulary of activity theory

Journal: Activity Theory

Volume: 1

Pages: 14-20

Label: Full Text

Abstract: The articles by Schurig and Enerstvedt in this issue of Activity Theory demonstrate some of the problems that arise from the theory's vocabulary. These appear to stem mainly from the fact that the English equivalents are almost always everyday words that are ordinarily understood differently than intended by the Russian or German originals. Indeed there is a real danger that the full scientific potential of Activity Theory will not be realised among English-speaking users if insufficient attention is given to the peculiar meanings of its fundamental terms.

URL: <http://www.comnet.ca/~pballan/AT2.htm>

Reference Type: Book

Record Number: 10

Author: Wells, G.

Year: 1999

Title: Dialogic inquiry: Towards a sociocultural practice and theory of education

City: New York

Publisher: Cambridge University Press

Label: Chapter 10

Keywords: zone of proximal development

Abstract: CHAPTER 10. THE ZONE OF PROXIMAL DEVELOPMENT AND ITS IMPLICATIONS FOR LEARNING AND TEACHING

There can be little doubt that, in the English-speaking world at least, it is the "zone of proximal development" that has been Vygotsky's most important legacy to education. Indeed, it is the only aspect of Vygotsky's genetic theory of human development that most teachers have ever heard of and, as a result, it is not infrequently cited to justify forms of teaching that seem quite incompatible with the theory as a whole. This centenary conference therefore seems an appropriate occasion to review Vygotsky's exposition of the zpd and to consider the ways in which this seminal concept has been modified and extended in subsequent work.

URL: <http://www.oise.utoronto.ca/~gwells/resources/ZPD.html>

Reference Type: Electronic Source

Record Number: 4

Author: Williams, B.

Year: 2001

Title: Activity systems: Activity theory: Cycles of expansive learning

Access Year: 2003

Access Date: 26th November

Last Update Date: July 2001

Label: Full Text

Abstract: This essay has five sections :-

1. What is activity systems theory ?
2. The factors
3. Theory of learning
4. The full activity systems model
5. So how on earth do we use this stuff ?

URL: <http://users.actrix.co.nz/bobwill/activity.pdf>

Reference Type: Report

Record Number: 23

Author: Worthen, H.

Title: Studying the workplace: Considering the usefulness of activity theory

City: Chicago

Institution: University of Illinois

Type: Working paper

Label: Full Text

Abstract: The field of industrial relations, to which labor studies and labor education are closely linked both historically and institutionally, is an interdisciplinary field and as such has never securely claimed a single theoretical foundation (see Kaufman 1993). At present contributions to the field arrive framed by the theoretical assumptions of their home disciplines which may be various schools of history, psychology, sociology, neoclassical economics, institutional economics, labor economics, anthropology, etc. Often, the theoretical assumptions of these home disciplines are left unstated and hence never negotiated in an ongoing discussion.

This article draws attention to a theoretical framework that may be turn out to be useful as a way of linking the theories that support work in this interdisciplinary field. This framework has been developing in the United States during the last forty years primarily in the discipline of education, where its emergence has supported the study of the role of language in child development, first language acquisition, second language acquisition, concept formation in older learners and, to a certain extent, adult education and literacy.

URL: <http://lhc.ucsd.edu/MCA/Paper/Worthen/helena.html>