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A CHRONOLOGY  
RELATED TO THE USE OF  
INTERPRETIVE STRUCTURAL MODELING  
AS A MEANS  
OF  
EDUCATIONAL CURRICULUM DEVELOPMENT,  
LEARNING MATERIALS DEVELOPMENT,  
AUTOMATION IN THE KNOWLEDGE INDUSTRY,  
AND RELATED DEVELOPMENTS

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YEAR	U.S. EVENTS	JAPANESE EVENTS
1974.	Publication of Battelle Monograph <u>Structuring Complex Systems</u> , in which Interpretive Structural Modeling (ISM) was introduced as a computer-assisted learning method for structuring information.	Visit to Battelle by the manager of Hitachi's Systems Laboratory at which time this method was discussed with him. <i>Kawamura seminars in Japan late 1974</i>
1975		Correspondence received to indicate that Japanese are beginning to use ISM in corporate activities. Mitsubishi and Hitachi are reported to have acquired the ISM software through Battelle, who signed an agreement to be represented in Japan by Mitsubishi.
1976	Publication of book SOCIETAL SYSTEMS through John Wiley, in which ISM theory and applications were discussed.	Kazuhiko Kawamura of Battelle visits Japan several times and lectures on ISM.
1977	Warfield publishes a paper called "Crossing theory and hierarchy mapping" in the IEEE SMC Transactions. This paper aims at automatic machine layout of structures and automatic drawing of them.	Kawamura publishes an article "Interpretive Structural Modeling" in Japanese in the Journ. of the Society of Instrument and Control Engineers.
1978	Warfield submits proposal to Exxon Foundation requesting support for project to develop self-paced educational programs for engineering off-campus graduate programs. Reviewers approve idea, but at the tail-end of the Exxon review, the project monitor who is a psychologist insists on revising the project to fit standard psychological experimental concepts. We are unable to preserve the idea and Exxon decides not to fund it. Efforts to do this work without funding flounder because the UVA ISM software is defective, being unable to handle more than 60 elements.	Mitsomuri and K. Haruna from Hitachi Ltd visit UVA to discuss ISM with Warfield. Warfield invited to give lecture at Univ. of Tokyo. Japanese present eight papers using ISM in various ways at IEEE SMC annual meeting in Tokyo. K. Haruna mentions to Warfield at that meeting that Hitachi uses ISM to sell computers, by developing structural model with clients of clients problems, then showing client how Hitachi computer will solve problems.



YEAR	U.S. EVENTS	JAPANESE EVENTS
1978 (continued)		Mizoguchi and Sato each publish papers relating to use of ISM in developing curriculum materials. Sato refers to contacts on this subject with Tatsuoka of the College of Education, Univ. of Illinois. Tatsuoka gives a paper at the ONR Contractors meeting in Columbia, Mo., where he discusses ISM as a tool useful in curriculum development.
1979	Warfield contacts IBM and describes Japanese activity.	Sato publishes a paper on the use of ISM to develop networks of instructional units. 7/9/019 Sugiyama, Tagawa, and Toda publish a Fujitsu report extending the work (1977) on crossing theory and hierarchy mapping, and show results of their software which enables 7/9/036 automatic organizing and printing of structures with up to 500 elements
1980		Kawamura goes on leave to Japan on a fellowship from Japan, and spends 6 months at Kyoto Univ., where he co-authors a book in Japanese that includes discussions of ISM.
1981	Warfield assists Renckly and Orwig to do research on curriculum design for naval recruitment programs. They present a paper at the Third Interservice/Industry Training and Equipment Conf. in Orlando.	Inagaki, Henley, and Inoue present a paper on computer-aided analysis of curriculum structure at the IFAC World Congress. Sato and four co-authors publish a Nippon Electric Co. R&D report on how they have designed a new computer system called SPEEDY, which they have introduced in Japan schools and colleges, in which ISM software is supplied in a low-level experimental use form for teachers to use in curriculum development.
1982	Warfield tries to interest Marine Corps in sponsoring curriculum development work using ISM.	Inagaki and Himmelblau describe research on how to incorporate logic elements in structural models of curricula, using a basis in ISM. Inagaki completes US education and returns to Inst. of Information Sciences and Electronics at University of Tsukuba, Ibaraki, Japan
1985	o	Hokkaido Univ. publishes article on improving the ISM software efficiency. written by OHuchi, Kurihara and Kaji. Two articles 1984 and 1985