

Running head: ACTION RESEARCH OF CHAOS STRATEGY to LEARN S-O-L

An Action Research Project exploring whether learning of Self-organized Learning can be
enhanced using a chaos instructional strategy

John Inman

Oregon State University

Graduate School of Education

Masters of Adult Education '00 Cohort

Abstract

Organic Systems thinking and the aspect of Self-Organization in learning settings for education are fairly new and research is minimal on effective methods for creating efficacy in learners in this discipline. I have observed the difficulty students within the '00 and the '01 cohorts have had in grasping the concepts. To some degree this can be attributed to the chaotic nature of the topic in and of itself. However, I believe that creative experiential instructional strategies may be able to help create learning in the field.

As I participated in the instructional strategies within the first class on Self-Organized Learning, researched the topic, and read the texts and articles, I began to formulate an idea of an instructional strategy based on the material to be learned. The foundation of the idea for this action research project lies with the very fabric of the topic at hand, order out of chaos. I am extremely excited about this area of research and would like to explore many ideas for instructional strategies using the concepts embedded within the topic.

The nature of this project depends on the learners having knowledge equal to the assimilation of knowledge gained through the first month of the S-o-L course. I do not believe that this instructional strategy could be used on students new to the topic. I am not in a workplace setting as of the draft for this action research project. Given my work situation, it was suggested that I might design an action research project that could take place within the cohort setting. This suggestion has provided me with motivation and insights into the envisioned instructional strategy that I probably would not have experienced had I been employed. The ability to conduct this project is totally dependent on the instructors embracing the project and building it into the curriculum for the course.

An Action Research Project exploring whether learning of Self-organized Learning can be enhanced using a chaos instructional strategy

Introduction and Purpose

Problem Statement

Can an instructional strategy based on chaos help students learn the complex concepts of Self-organized Learning?

Evaluation of My Researchable Question

1. Feasibility

As I formulated this instructional strategy and the action research project to explore its effectiveness, several questions came to my mind. First, is a project of this nature required to be of substantial length or can the implementation of an hour instructional strategy be sufficient to research the question. After giving this substantial thought, I believe that with a simple formative assessment given up front and at the end of the intervention and with observation of the learning process, I can collect enough valuable information to inform my practice and validate or invalidate my researchable question. My conclusion therefore is that this is indeed a feasible action research project.

2. Clarity

I believe that the topic is clear and understandable within the educational community. Particularly those familiar with or interested in Organic Systems, Self-organized Learning, and Chaos.

3. Significant

I believe that this question is significant. This is a complex topic and if new instructional strategies can be developed to help in the instruction of the field, learners and instructors alike will benefit. If I can document that learning is enhanced by a new instructional strategy, this would help create the benefit as described.

4. Ethical

This research project and the instructional strategy upon which it is based in no way will

harm or damage others or the systems within which they are embedded.

5. Relationship

There are several relationship variables involved in this project. First the setting is a cohort class where two cohorts are combined. There is a knowledge gap between the two with the earlier cohort team more fluent in instructional design and systems thinking. Second, as a member of the cohort, it will be difficult for me to stay completely objective. My observations will be biased by my closeness to the cohort and my personal perceptions of people, materials, and the context within which the research will take place. I may as well have a hard time remaining an observer only, something I would need to work on. I would love to participate in this instructional strategy; it is just the kind of activity I love. The role of the professors may as well have an impact on the project depending on the roles they decide to play.

Hypothesis

My underlying assumption for this instructional strategy based on chaos is that learners faced with trying to create order out of chaos, working in a social setting, and given a rich amount of foundation data from which to work, will self-organize, create order, and create substantial learning through the process. It is also my assumption that the instructional strategy as I have it designed, would not be suitable for those without a foundation of knowledge of the subject matter.

Review of Literature

I have conducted an extensive review of journals and of the Internet to see what research has been done in this area. The searches have been based on the search terms "Action Research", "Chaos", "S-o-L", "Self-organized Learning", "Self-organization", and "Learning Strategies". I used the search terms in a variety of configurations and at this point in my research, I have found no studies that address my researchable question or are even close. The closest study I found was Coombs and Smith (1998) "Designing a Self-Organized Conversational Learning Environment". This abstract provided some insights into what can be achieved through Self-organized Learning strategies. I also found an example of where a Chaos strategy was implemented and successfully

helped achieve a community college's objectives in the Carlsen and Radakovich (1999) article "Chaos Works". Another article closely related to the was Coombs and Smith (1998) article "Designing a Self-Organized Conversational Learning Environment", is "How Action Research Can be Integrated in The Singapore School System", a research paper on action research as self-organized learning by Lee (2000).

All of these articles provided interesting insights into self-organized learning and action research; however, none specifically addressed the area of research that I have proposed. Further searching may yield more results, however at this time I must suggest that little or no research has been done in the area I am proposing.

Methodology and Procedures

Since my project is based on the implementation of an instructional strategy, an outline of the activity is in order. I can then explore the methodology and procedures for the action research.

Chaos Instructional Strategy

The basic design of the chaos strategy is based on providing the cohort with cards, placed in the middle of the room in no order, with a word or phrase on each card that represents some portion of the history of systems thinking. Names, concepts, fields of study, scientific movements, and anything else that might be relevant would be included. Several copies of each may also be included. The cohort as a group would then be asked to enter the room and create order out of chaos. I am hesitant to provide too many instructions as this would predispose the group to a certain type of organization and set expectations that may not be in order. The full lesson plan is included in the appendix.

Population and Samples

The population for the study would be inclusive of the members of the '00 and '01 masters cohorts. About 38 members in all expected. There would not be a sample size of less than 100%. One deviation from the study would be to split the group into two separate groups and let them evolve down their own paths. This would increase the variability in the study, which

I believe would be a benefit, however it would be more difficult for me to collect observable data.

Instrumentation

Instrumentation will consist of three different components. Observation will be the primary method of collecting data during the activity. Before and after the activity, each participant would complete an individual survey (simple). The first survey would be designed to set the baseline of comfort level with the material and the ability to use the material. The second survey would be designed to measure the same after the activity with the expectation that a positive gap will be apparent. On the second survey, an opportunity for written comments will also be provided. The third method of collecting data will be photographing team members during the activity and the completed projects what every they may be.

Reliability

There are two ways to determine the reliability of the study. First split the group into two groups and study each group separately. They would of course be in separate rooms. The second is to involve the professors into the observation process and then compare results after the activity. This will help reduce observer bias and provide a more robust look at the process. Three sets of eyes are always better than one.

Validity

I will gauge the validity of the study based on the surveys at the beginning and end of the activity. If a significant gap is produced, my hypothesis will be validated. As well, my expert judgment and that of the professors will be contributors to the validation of the study. This will help determine whether alterations of the process need to be made and the study recreated based on an altered process.

Research Design

Will be developed with the help of the professors if the project is approved.

References

Carlsen, Charles J., & Radakovich, Dan (1999). Chaos Works. Leadership abstracts World Wide Web Edition, 12(1), . Retrieved June 27, 2002 from the World Wide Web:
<http://www.league.org/publication/abstracts/leadership/labs0699.htm>

Coombs, Steven J., & Smith, Ian D. (1998). Designing a Self-Organized Conversational Learning Environment. Educational Technolgy, May-June, 17-28.

Lee, Vivien (2000). Conference Paper: How Action Research can be integrated in the Singapore School System [On-line]. Available: <http://www.geocities.com/eduworkz/>

Appendix

Order out of Chaos: A Self-organized Learning Strategy "Description"**Description:**

This is an experiential exercise that requires participants to construct order and self-organized learning from about 150 words on cards provided in the middle of the room. Each card will have a word or phrase that is associated with the evolution (hint: probably a word on a card) of scientific through current organic systems thinking. Instructions will be to simply create order out of the chaos that the learners confront. Learners must have a general understanding of the thoughts on the topic of organic systems to participate.

Outcomes:

- Group demonstrate ability to self-organize through:
 - Sorting of the words into groups of meaning
 - Using tools such as an affinity tool and mind mapping to build into networks
 - Explaining the relationships between the nodes in the network and how they relate
 - Explaining how relationships influence each other
 - Explaining how scientific thought and systems thought have changed over time
 - Build strong learning of the concepts by having to construct them in a social setting

Uses:

This strategy is useful for having learners experience in depth what self-organized learning is and for helping to instill into participants the concepts of this complex and hard to grasp field.

Materials:

Flip charts, butcher paper on the wall, sticky pads, markers, cards preprinted with words, tape, and paper for writing notes.

Instructions:

In a vacant room or rooms depending on the number of participants (18 or so per group), pre-hang butcher paper on the walls, distribute materials, and arrange the room so that there is a wide open space for easy milling around and easy access to the walls. Distribute the cards preprinted with words in the middle of the floor face up with each one visible to participants. Bring in participants and provide the instructions as follows: "This is a group learning exercise designed to help you understand self-organized learning. You will have one hour to do or create what ever you want with the materials provided. There are no further instructions. You may start any time." Facilitators may provide inputs to the system particularly if they are unexpected inputs but not to tell participants what to do. They then observe.

Tips:

You may want to provide several of each card so that multiple people can explore a concept at one time. As well, cards may be used at several places at once.

References:

Order out of Chaos: A Self-organized Learning Strategy "Process"

Process	Materials	Time
<p>Before the room is set up and learners take a break, have them fill out a quick survey (attached) to discover how comfortable they are in a couple of key areas of self-organized learning. Make sure they put their names on the surveys. Collect the surveys because surveys at the end of the exercise need to be matched with the ones collected at the beginning of the exercise.</p>	<p>Enough surveys for all of the participants.</p>	<p>2 min</p>
<p>In a vacant room or rooms depending on the number of participants (18 or so per group), pre-hang butcher paper on the walls, distribute materials, and arrange the room so that there is a wide open space for easy milling around and easy access to the walls. Distribute the cards preprinted with words in the middle of the floor face up with each one visible to participants.</p>	<p>Flip charts, butcher paper on the wall, sticky pads, markers, cards preprinted with words (four sets per group), tape, and paper for writing notes.</p>	<p>15 min set up per room</p>
<p>Provide the instructions for the exercise. "This is a group learning exercise designed to help you understand self-organized learning. You will have one hour to do or create what ever you want with the materials provided. Presentation (s) will be given with finished on the experience. There are no further instructions. You may start any time."</p>		<p>2 min intro.</p>
<p>Step out of way and watch the process unfold. Take notes on observations and act as a catalyst if needed inserting but not directing.</p>		<p>1 hour</p>
<p>Debrief as a group of experience. Presentation (s) of experience to demonstrate learning.</p>		<p>15 min</p>
<p>Complete survey and return with name on survey to facilitator.</p>	<p>Enough surveys for all of the participants.</p>	<p>5 min</p>
Total Time		<p>1 1/2 hr</p>

Order out of Chaos: A Self-organized Learning Strategy "Surveys"

Pre activity survey

Question	Score: 1 low, 10 high
1. Am I confident in my ability to design an instructional strategy based on chaos?	1 2 3 4 5 6 7 8 9 10
2. Am I confident in my ability to explain the concepts of organic systems?	1 2 3 4 5 6 7 8 9 10
3. Am I confident in my ability to explain the evolution of scientific thought?	1 2 3 4 5 6 7 8 9 10
4. Am I confident in my ability to define self-organized learning?	1 2 3 4 5 6 7 8 9 10

Post Activity Survey

Question	Score: 1 low, 10 high
After participating in the chaos learning experience:	
1. Am I confident in my ability to design an instructional strategy based on chaos?	1 2 3 4 5 6 7 8 9 10
2. Am I confident in my ability to explain the concepts of organic systems?	1 2 3 4 5 6 7 8 9 10
3. Am I confident in my ability to explain the evolution of scientific thought?	1 2 3 4 5 6 7 8 9 10
4. Am I confident in my ability to define self-organized learning?	1 2 3 4 5 6 7 8 9 10
5. Please provide your insights into the exercise that you just experienced.	