DOCUMENT RESUME

ED 373 028 SP 035 367

AUTHOR Cochran, H. Keith
TITLE Differentiating Whole-theme and Common Paradigms of Instruction.
PUB DATE Nov 93
NOTE 20p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (New Orleans, LA, November 10-12, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cognitive Development; Higher Education; Instructional Design; *Instructional Effectiveness; Instructional Innovation; *Learning Theories; *Models; Teacher Attitudes; *Teaching Methods; *Thematic Approach; *Thinking Skills; Undergraduate Students

ABSTRACT

Many educators assume that learning occurs best when a student assembles a body of knowledge one piece at a time. With this approach, the teacher allocates to the student a proportioned number of pieces during each class period and the student's job is to work toward making the pieces form some intelligible and meaningful whole. The whole-theme model is an alternative to this approach. Thematic instruction begins by presenting an entire domain from the beginning of instruction instead of building and assembling a body of knowledge piece by piece. The teacher expands the theme through each successive class until students conceptualize the domain in its detailed complexity. Because the theme is always present in the mind of the learner, it facilitates understanding of how and where specific pieces fit into the whole and provides a vehicle for spontaneous learning and reorganization to occur. A case example illustrates a thematic context which led to the spontaneous exploration of contemporary issues relating to intelligence. Empirical evidence indicates that students demonstrate a greater capacity for higher order thinking if they are taught by a whole-theme approach rather than in a piecemeal fashion. (Contains 15 references.) (Author/LL)

Differentiating Whole-theme and Common Paradigms of Instruction

H. Keith Cochran

University of Alabama

November 1993

Running Head: INSTRUCTIONAL APPROACHES

Abstract

Many educators assume that learning occurs best when a student assembles a body of knowledge one piece at a time. With this approach, the teacher allocates to the students a proportioned number of pieces during each class period and the students' job is to work toward making the pieces form some intelligible and meaningful whole. An alternative to this approach is to teach from a whole-theme perspective. From the very beginning, the teacher presents the subject domain to the students in its entirety. The teacher expands the theme through each successive class until students conceptualize the domain in detailed complexity. From the author's personal observation and experience, students demonstrate a greater capacity for higher order thinking if taught by a whole-theme approach than in a piecemeal fashion.

Common Paradigmatic Approaches to Instruction

A paradigm is often defined and used as a pattern or model that establishes boundaries and offers help in solving problems. To many persons, its function is to provide a filter to screen data from the surrounding world. Paradigms influence perceptions through which experiences are given meaning and organization. When something does not fit a well established and accepted paradigm, our natural response is to reject it. A paradigm used in this way may be compared to a template by which one attempts to compare something novel to something established.

For the classroom teacher, common paradigms of instruction set forth an approach to teaching that conforms to some explicitly or tacitly accepted model of instruction. If a teacher strays from this paradigm, then s/he may be perceived by students and others of being in left field or not really teaching anything at all. Evaluations of this teacher might suffer, especially if those evaluating are committed or accustomed to a common paradigm for teaching. Kuhn (1970) suggested that the general atmosphere of normal practice is conformity to the established paradigm. In education, this normal paradigm is the traditional school culture, to which the normal educator continues to conform in spite of the widespread recognition that the existing school culture is unacceptably problematic. Nevertheless, there are those who depart from the established norm and view teaching as a dynamic process. For them, such evaluations are unlikely to serve as an obstacle. Of primary concern to these individuals is not conformity to a particular teaching paradigm, but to what degree learning is occurring.

Approaches to Instruction and Learning

When teachers enter a classroom, they bring with them certain preconceived ideas which affect how their class(es) will be conducted. Instructional approach is only one of

many variables which is greatly influenced by one's notion of learning. If a teacher perceives learning from a behavioral perspective s/he may view the learner as a passive recipient of, and responder to, stimuli. Or, if learning is understood in terms of an information processing model set forth by some cognitive explanations of learning, the learner is envisioned as some sort of microprocessor for the storage and retrieval of information (Atkinson & Shiffrin 1968; Neisser, 1967; Newell & Simon, 1972; Rumelhart, 1980). In either case, one's perception of learning influences his/her approach to instruction.

Naive Conceptions of Learning

For the majority, (i.e., those with no formal training, naive learners and teachers), learning is likely to be internalizing external knowledge. Reddy (1979) described human communication using the conduit metaphor and pointed to how the everyday use of the English language imposes this way of thinking upon us. Iran-Nejad (1990) called this concept of learning straight internalization of external knowledge. Learning, as understood in this way, presumes knowledge to exist independently, apart from the learner. Information is received directly by the learner from an external source, such as a teacher, and stored for future retrieval. Iran-Nejad depicts this as being analogous to a buyer of ready-made clothing, hanging new items in the closet waiting for retrieval until such time as needed for a particular occasion.

The straight internalizer is likely to be extrinsically motivated although some degree of intrinsic motivation may be present. Locus of control is external and success or failure is likely to be attributed to luck or task and subject matter difficulty. Since knowledge is understood to exist outside the learner, the actions of others are likely to be the culprit if the learner is unable to acquire some body of knowledge. Naive learners struggle with the anxiety

associated with the failure of their retrieval processes. To continue the clothing analogy, they would be concerned with not being able to find an item of clothing that was once hung in the closet when it was needed for a future occasion (Iran-Nejad, 1990).

Instructional approaches based upon this theory of learning are weighted with the constraints of time and detail. Seldom, if ever, is there adequate instructional time available to meticulously incorporate every facet and peculiarity of a unit of study into the allocated time. Further limitations imposed by this approach constrain the opportunity for student discussion and questions. This may be one explanation for teachers choosing the lecture model for instruction while knowing that it may not be the most effective method (Cuban, 1984). With these constraints of time and detail, teachers must determine what to exclude from instruction and may subsequently go away feeling that they have in some way "short-changed" the students.

When applied to teaching and learning, this common paradigm restricts both the teacher and the learner. Learners are sentenced to a piecemeal approach to learning that requires the learner to deal with an increasingly complex and difficult to manage body of knowledge. This often proves to be an anxiety ridden attempt to produce what is in the mind of a teacher since that is what represents the correct response. Since learning is likely to be understood as the acquisition of knowledge without the benefit of the learner's own intuitive knowledge (Iran-Nejad, 1992), original thinking in the learner is stifled.

Theories of Learning and Teaching

Recognizing the inadequacy of naive conceptions of learning and teaching, many educators have sought ways of going beyond them to realize deeper and more meaningful learning. Many of these alternative approaches are far reaching improvements, others

continue to share many elements of naive conceptions and reflect the fundamental underpinning of piecemeal teaching.

Learning as Reconstruction

One way to go beyond straight internalization is to assume that the learner does not internalize but constructs what is learned. This view of learning may share with the naive conception of learning the notion that knowledge is already constructed and externally available. The teacher's task, therefore, is to disassemble this complex body of knowledge and dispense it to learners piece by piece. Learners, then, must reconstruct the knowledge in their own mind as they internalize it. Iran-Nejad (1990) calls this constructive internalization of external knowledge. However, reconstruction seems to more accurately capture its essence since knowledge is considered to exist independently from the learner, having been initially constructed by the teacher, textbook author(s) and other "experts." (Reconstruction is not used here in the sense of reconstructing a memory that has once been constructed by the individual as discussed by Bartlett, 1932). Reconstructive learning is somewhat more complex than straight internalization and requires certain cognitive tools or strategies for it to be accomplished. To follow Iran-Nejad's clothing illustration, this approach to learning is analogous to the tailor or clothes maker who follows a pre-existing model constructed by others and attempts to produce a version that replicates the original.

Locus of control for the reconstructor tends to be external and the learner is usually extrinsically motivated. Anxiety is likely to arise in learners from the concern that they may not able to replicate the model or pattern, or meet the expectations of the instructor (or designer of the clothing pattern). Unless instructors are explicitly clear with regard to their expectations, learners may frequently encounter the unpleasant experience of uncertainty.

Like straight internalizers, constructive internalizers are always looking to some external standard or template to direct their teaching and learning.

Instructional approaches built upon the reconstructive conception of learning include lecture-recitation, discussion, and questioning to name only a few. Each of these elicits from the learner deeper thinking processes than simply the lecture model alone. Although this approach to instruction calls for more creativity from the teacher, it fails to foster the same level of creativity for the learner.

Learning as Reorganization

Learning as reorganization of one's own internal knowledge (Iran-Nejad, 1990) is rare in academic settings, and is found among those adults who learn to loosen the grip of their active, executive control. This view of learning is based on the assumption that human beings inherently learn best when learning occurs dynamically, allowing the biological hardware to provide the tools for learning without the domination of the active executive control. This is the type of learning that is typical among children before they begin their formal education. Authentic world contexts (Holt, 1969; Iran-Nejad, 1990) provide the learning environment in which children experience many reorganizations of their intuitive knowledge. Learning is a reorganization of what is already present within the learner. Again, Iran-Nejad applied the clothing analogy by using the example of a clothes designer who follows, not an external pattern, but, his/her own intuitions in creating original and innovative designs (Iran-Nejad, 1990).

Reorganizers of internal knowledge are likely to be intrinsically motivated . Curiosity, interest, and the need to know, understand, and grow are probable motivators. Success or failure is attributed to the learner's own efforts or abilities; thus, these learners are

characterized by an internal locus of control. Anxiety is qualitatively different than anxiety in the straight internalizer or reconstructor of external knowledge. Here, learners are not nearly as concerned about the approval of others or even whether a certain grade is obtained, as they are in authentic problem solving. Instead, anxiety takes the form of curiosity which in turn, increases interest, inspires further investigation and study, and ultimately deepens learning. When uncertainty is experienced by the reorganizers of internal knowledge, it is a pleasant experience and it frequently motivates them to search for a meaningful resolution to incongruities. Whatever approach these learners may take, it must, to be effective, be broad enough to encompass as its object, an entire domain of learning at once.

A Whole-theme Approach to Instruction

Thematic Instruction

Thematic instruction begins by presenting an entire domain from the beginning of instruction instead of building and assembling a body of knowledge piece by piece. We learn best, not in a mechanistic way as a recorder of information, but as a constructor and developer of knowledge structures (Resnick & Klopfer, 1989). Thematic instruction provides the ground or context that allows us to more readily focus on specific figures or pieces (Iran-Nejad, Marsh, & Clements, 1991). One way this may be accomplished is through the use of a thematic organizer that is rich enough to capture the theme of a subject domain, and simple enough to be understood and held in the mind of the learner. This is not a template, it is a means of organizing a learner's own intuitive knowledge base so that he or she might be pointed in the direction of learning. Because the theme is always present in the mind of the learner, it facilitates understanding of how and where specific pieces fit. Thematic instruction provides a vehicle for spontaneous learning and reorganization to occur.

A case example. There are many ways in which students could be pointed in the direction of thematic learning; it is only limited by the creativity of the instructor. The important thing is to help students to organize their intuitive knowledge base in order for it to serve as a theme for discussion. In an attempt to make the subject and issues of intelligence meaningful for my undergraduate educational psychology students, I provided a thematic context which led to the spontaneous exploration of many contemporary issues relating to intelligence. Although this specific application of thematic instruction may only be used once with the same group of students, it nonetheless illustrates how originality combined with context has the potential to provide very rich learning experiences.

It has been my practice to give simple, unannounced quizzes to my students to encourage the reading of assignments and to reward regular attenders. One day I announced a quiz and explained tc the students that there would be ten questions which they would be responsible for supplying the answers. After the moans subsided, I explained to the class that they could use their Educational Psychology text for this quiz if they would like. This seemed to make most of them happy; that is, until I began asking the questions. Much to their surprise, I asked questions that were based on knowledge of world geography, natural science, math, algebra, and philosophy. Everyone was looking at one another and at me, thinking that I had lost my mind. After having the students pass their papers to the front of the room, I explained to them that the questions I had used were representative of questions used on many well-known intelligence tests. I asked if they thought such questions were adequate to measure "their" intelligence. Most everyone indicated that they did not think that that kind of question could adequately measure anyone's intelligence. From this introduction, the students began to question, debate, and discuss many of the major issues with regard to

intelligence spontaneously! Included in their discussion was: Is intelligence a single or multiple trait? What do IQ tests measure? Are IQ tests fair? If not, whom do they favor and against whom do they discriminate? Is IQ determined by heredity or environment? And, Is IQ fixed or changeable? Students spontaneously took both sides of the issues and attempted to state why they thought intelligence was determined, for instance, more by environment than genetics. They began to see and discuss the danger with labeling students from IQ tests as well as the possibility of mislabeling them from an inaccurate measurement. Acknowledging that schools put much stock in IQ scores, they determined, they, as teachers, should be very careful not to be overly influenced by an IQ score possibly recorded on a student's permanent record.

During the last fifteen minutes of the class, I highlighted several major theories of intelligence for them. After briefly describing a theory to them, they were able to classify the theorist based on our previous discussion. Dynamically, the class discussed practically every major issue with regard to intelligence. Their discussion further indicated a thematic understanding of the issues in the study of intelligence. Even if they were not able to remember Cattell and Horn's theory of fluid and crystallized intelligence or Sternberg's Triarchic theory of intelligence, they estimated that even five years later, they would remember the issues with which we dealt that day. The class had been meaningful enough that most felt that it would be something that would stay with them for a long time.

The Whole-theme Approach: A Paradigm for a Designer or Tailor?

After experimenting with the thematic approach when teaching my undergraduate educational psychology class, one question frequently badgers me: Am I practicing the whole-theme approach as a tailor or designer? In other words, where is the fine line to be

drawn between reconstruction of a pre-existing method and reorganization of one's own knowledge in the process of reflecting to do better in one's teaching? Acceptance of the whole-theme approach to instruction feels liberating and should not simply be the acceptance of another paradigm with rigid boundaries set by others for the teacher to follow. Inherent to the approach is the freedom of creativity. The whole-theme approach should not only tear down the rigid walls of naive or piecemeal paradigms, it should provide a clear alternative to teaching and learning. As the teacher or the learner, I am not conforming to someone else's template, as I would if I were in the role of a straight internalizer of a pre-existing teaching method. Neither am I following a recipe to replicate someone else's pre-existing teaching method, as I would if I were in the role of the reconstructor of external knowledge. If this occurred, the whole-theme approach would run the risk of regressing to traditional paradigms with restricting boundaries. Does freedom from a template or a recipe provided by the whole-theme approach mean that teachers can do whatever they wish in the name of "whole-theme instruction" and that it should be acceptable? In teaching intelligence as I did, I was not operating by trial and error; when I had previously taught intelligence using the lecture model, I systematically presented each theorist and the distinctive characteristics of each theory and most students appeared to be overwhelmed by the bulk of material. Neither was I operating based on naive intuitions. Those intuitions had already been reorganized into my current understanding of the whole-theme approach. Nor was I checking off everything I was doing against a template checklist or a pre-existing recipe. On the other hand, I had a very definite thematic notion about what I was doing. I knew I was after an indepth engagement of the students intuitive knowledge base. I knew I wanted the class to organize for a 90 minute journey toward understanding intelligence; and I knew I wanted it to encompass the content

jectives of the syllabus. Therefore, what I was doing was far from (a) being arbitrary, (b) using naive intuitions, (c) matching a template, or (d) following a recipe.

Then, by what criteria might we judge how the whole-theme approach is different from template matching or recipe-following practices? Traditional paradigms employ their template as the measure or standard for new experiences in teaching and learning (See Figure 1). When differences are encountered between the incoming data and the prior schema, they must be consciously attended and made to conform to the established boundaries of the prior paradigm. Acceptance of a difference would mean changing the old schema or creating a new one.

However, in the whole-theme approach, there is no conscious or unconscious comparison process; there is no preexisting template against which to compare, and no rigid to-be-reconstructed identity. The theme serves as a context for, but not as a template against which, new learning or behavior is evaluated (See Figure 2). Moreover, the theme is the whole-theme of the individual's ongoing schema-of-the-moment and not someone else's template for reconstructing; as Figure 2 suggests, there is no other template external to the theme itself. Since it is a reorganization of the individual's internal knowledge, someone else does not have ownership of the theme; the individual does. As such, any approach that consistently supports the theme of a lesson might be found acceptable and owned by the teacher. Instruction radiates the ongoing theme of the subject matter. Furthermore, because the theme serves as an ongoing context, a check and balance system, so to speak, is naturally built into the whole-theme model. Any instructional approach that grows out from the ongoing theme and answers back to that theme coherently is accepted. If the approach "fails to answer" back to the theme or answers back incoherently (i.e., fails to consistently support

the theme), a warning is dynamically sounded within the person. That approach is, then, rejected and considered unacceptable.

Implications for Education

Traditional views of teaching and learning remain firmly in place while high quality, constructivist-based instruction is simultaneously urged on teachers (Darling-Hammond 1990, Peterson 1990). Teachers may see themselves as responsible for student success on standardized tests as well as encouraging students to explore multiple ways of knowing (Peterson & Knapp 1993). However, these expectations should not be mutually exclusive. It is still possible to focus on specificity within the context of whole-theme instruction. Once the thematic context and ground of a domain is established, pieces or figures dynamically find the right fit, as in a figure-ground relationship.

Another lesson with regard to these approaches to teaching and learning finds its relationship with the type of goals that teachers and learners set for themselves. With the straight or reconstructive internalization of external knowledge paradigms, educational goals are likely to be performance goals set by the teacher for the learner. Learners, on the other hand, must please the teacher whose approval must be sought. However, with the whole theme approach, teachers must find ways of setting performance goals for themselves to accommodate the performance goals set by the learner, since learning is reorganization of the learner's own knowledge. The qualitative difference here lies in the attitudes and motivations of the learner and the teacher. Those who have their performance goals set by others are not as interested in learning as those who are following their own performance goals. This is the true essence of intrinsic motivation. Students who set their own learning goals are interested in learning regardless of whether they meet the teacher's or anyone else's expectations.

Conclusion

When students become thematically immersed in a topic of study, learning is spontaneous and becomes instinctively interesting. Students, who are otherwise difficult to engage, begin to exhibit an intrinsic quality of motivation to participate in the classroom experience. With such spontaneity, reorganization and higher order thinking occur dynamically, and often unconsciously. Exploration of a whole-theme approach to teaching and learning moves one to where intuitions may be trusted more than usually thought acceptable. This does not mean that one's intuitions are always reliable. However, inaccuracy is only a temporary state awaiting the next reorganization.

References

Atkinson R. C. & Shriffrin, R. M. (1968). Human memory: A proposed system and its control processes. In K. Spence & J Spence (Eds), The psychology of learning and motivation, 2. New York: Academic Press.

Bartlett, F. C. (1932). Remembering: A study in experimental and social psychology. Cambridge, England: Cambridge University Press.

Darling-Hammond, L. (1990). Instructional policy into practice: The power of the bottom over the top. Educational policy and practice analysis, 12.

Iran-Nejad, A. (1990). Active and dynamic self-regulation of learning processes. Review of Educational Research, 60, 573-602.

Iran-Nejad, A., Marsh, G. E., & Clements, A. D. (1992). The figure and the ground of constructive brain functioning: Beyond explicit memory processes. Educational Psychologist, 27, 473-492.

Kuhn, T. (1970). The structure of scientific revolutions. Chicago: University of Chicago Press.

Marsh, G. & Iran-Nejad, A. (1992). Intelligence: Beyond a monolithic concept. Bulletin of Psychonomic Society, 30(4), 329-332.

Neisser, U. (1967). Cognitive psychology. New York: Appleton-Century-Crofts.

Newell, A., & Simon, H. (1972). Human problem solving. Englewood Cliffs, NJ: Prentice-Hall.

Peterson (1990). Doing more in the same amount of time: Cathy Swift. Educational Evaluation and Policy Analysis 12, 261-280.

Peterson, P. L. & Knapp, N. F. (1993). Inventing and reinventing ideas: Constructivist

teaching and learning in mathematics. Challenges and Achievements of American Education, 134-157.

Reddy, M. J. (1979). The conduit metaphor: A case of frame conflict in our language about language. In A. Ortony (Ed.), Metaphor and thought (pp.284-324). London: Cambridge University Press.

Resnick L. B. & Klopfer, L. E. (1989). Toward the Thinking Curriculum: Current Cognitive Research. Alexandria, Va.: ASCD.

Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence, and education (pp. 33-58). Hillsdale, NJ: Lawrence Erlbaum Associates.

Satyadas, A., Iran-Nejad, A., Chissom, C., & Chen, H. C. (in press). Intelligence: Exact computation or biofunctional cognition. Bulletin of Psychonomic Society.

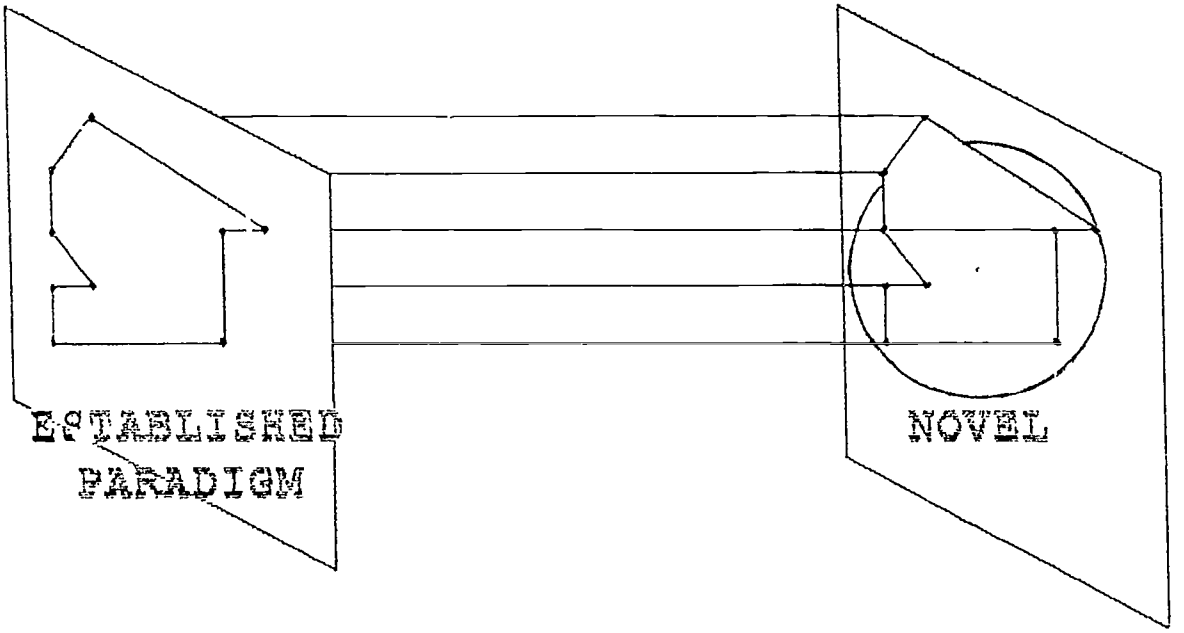
Author Notes

I gratefully acknowledge the input of Dr. Ali Iran-Nejad in the preparation of this manuscript. After reviewing my work he provided valuable feedback that helped me to focus more accurately on the embryonic ideas herein presented.

Figure 1

Common Paradigm

Reconstructor/Template Model

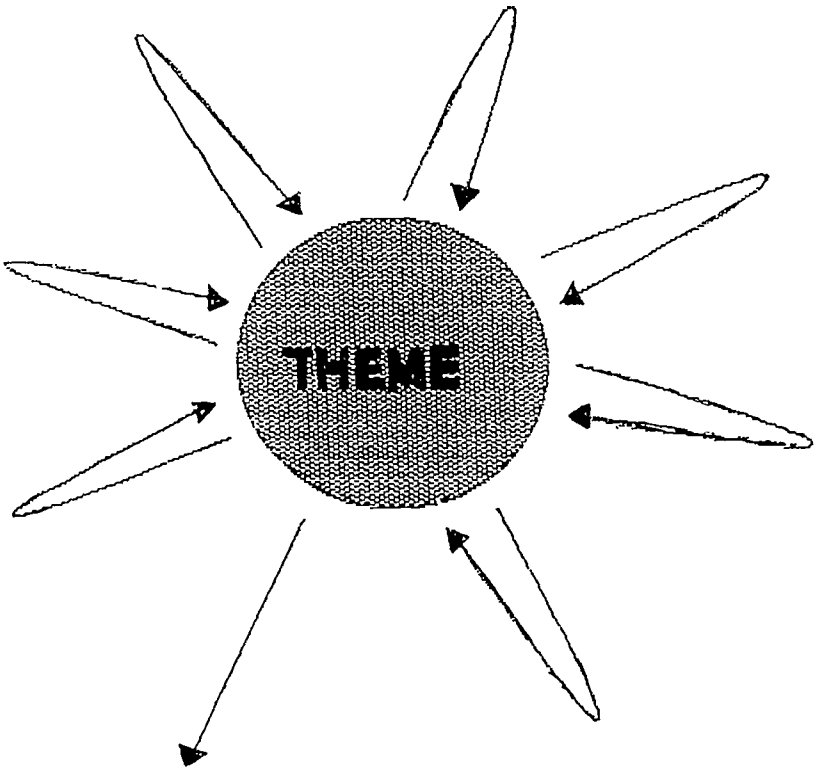


WARNING: This approach does not fit the established paradigm. The new experience/ data does not conform to the template boundaries. Change and/or adaptation may be required if this model is accepted. REJECT!

Figure 2

Whole-Theme Paradigm

Reconceptualization/Thematic Model



*WARNING: Tnis approach failed to answer back to the theme and thus should be rejected.