

# The Effect of Interruption of Activity on Affect

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**ABSTRACT.** The successful therapeutic use of activities in occupational therapy is dependent on a thorough understanding of activity analysis including the degree to which the client values the activity. This study investigated one component of an activity, interruption, and the influence interruption of an activity had on affect as measured by three factors of the Osgood semantic differential. A comparison was made between an interrupted group and a non-interrupted group on how they felt about the product. The subjects were 30 female non-occupational therapy students who participated in a stenciling activity making a greeting card. Data analysis indicated the interrupted group had significantly lower scores on the power ( $t = -1.90, p = .03$ ) and action ( $t = -2.47, p = .01$ ) scores of the Osgood ratings than did the non-interrupted group. Implications of this research to occupational therapy practice are discussed as well as suggestions for further research.

The philosophical base of occupational therapy adopted by the AOTA Representative Assembly in 1979 states that occupational therapy is based on the belief that "purposeful activity, including its interpersonal and environmental components, may be used to prevent and mediate dysfunction and to elicit maximum adapta-

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tion" (Hopkins & Smith, 1983, p.27). The use of activities have been viewed as the "primary media of occupational therapy" (Cynkin, 1979, p.47). Regardless of the frame of reference utilized in treatment, all contain postulates regarding intervention which are "articulated to guide the therapist in synthesizing or designing activities that will facilitate the development of function" (Mosey, 1981, p.142). A clarifying definition of purposeful activities is presented by Mosey (p.99) as "doing processes directed toward a planned or hypothesized end result." "A historical tenet of occupational therapy has been that purposeful activity provides the incentive and opportunity for individuals to achieve mastery and thereby add to their sense of competence" (Fidler, 1981, p.569). "Mastery and competence are most significantly verified, seen, and manifested in the end product of an activity" (p.570).

In order to fully understand and use activities as an effective therapeutic tool, all their properties must be known (Mosey, 1986). Also, "involvement in an activity can be either therapeutic or damaging to the patient, and therefore it is essential that we become more aware of and more carefully evaluate the psychodynamics of activities" (Fidler & Fidler, 1963, p.72-73). "The interpersonal environment in which the activity takes place should be clearly defined" (Mosey, 1986, p.243). Mosey stated that purposeful activities designed for evaluation and intervention must be preceded by what she terms activity analysis and activity synthesis. Analysis identifies component parts of an activity whereas synthesis combines the components of the human and nonhuman environment to obtain a therapeutic outcome. "Activities are analyzed relative to their probability of eliciting behaviors indicative of function and dysfunction as enumerated in a particular frame of reference" and "activities are synthesized based on knowledge of the gestalt of behaviors the therapist wishes to observe" (Mosey, 1981, p. 117).

Cynkin (1979) states that to make activities therapeutic, the characteristics and circumstances that should be included are: (1) the activity must have meaning and relevance to the client, and (2) the activity must be systematically organized to arouse and sustain the will to learn which includes having a known beginning and end, having a sustained sequence, requiring effort from the client, and having the ability to visually monitor progress. These conditions

should exist in a clinical setting in order for a therapeutic response to occur. There are, however, many influences which may change the clinical setting. These influences and their effects should be identified to enable therapists greater control when creating a therapeutic environment.

One such influence is the possible interruption of the activity session. Interruption may be planned, as in a long-term project lasting several sessions, or unplanned (possibly due to lack of time, a supply shortage, an early discharge, or an error in the design or in performing the activity). Cynkin (1979) outlined some rules for learning activities as developed by J. Bruner which discussed some effects of interruption. "To achieve the sense of accomplishment, or competence, requires a task that has some beginning and some terminus. Tasks that are interrupted are more likely to be remembered. But the drive to completion does not hold true if the tasks are "silly" in the sense of being meaningless, arbitrary, and without visible means for checking progress" (p.36).

Interruption may change how the client feels about an activity. Interruption may also change the necessary conditions for a therapeutic environment, regardless of frame of reference used, by disturbing a sustained sequence of doing an activity and altering the sense of the beginning and the end. It may impede checking progress or change the nature of the visible means of checking progress. According to the behavioral frame of reference, a "successful task experience and the sense of accomplishment that comes from the task completion can be a source of reinforcement" (Bruce & Borg, 1987, p.103).

Kielhofner (1985), in his model of human occupation, views man as a human open system, cycling through the stages of intake, throughput, output, and feedback. Feedback is part of the human open system cycle which he defines as "the return of information by which the system learns about the process or consequences of its action" (p.37-38). "It forms a connection between output and intake" (p.6). Interruption of an activity may change the visible means to assess progress (output). If doing an activity is interrupted, a client assessing one's progress will have different output and feedback than if a product or a specific stage were finished. This new information (feedback) cycles back to become intake,

which then goes to throughput, where it is processed through its subsystems.

Interruption may affect the subsystems in that the client's volition may be influenced by an altered belief of effectiveness in the environment (personal causation), a change in the meaningfulness of the activity (value), and a change in the feeling of enjoyment in the activity (interest). This may impact negatively on the development of roles and habits and future performance. A vicious cycle may begin in which either internal satisfaction or external demands are not met (Kielhofner, 1980). A therapist must understand the effects of interruption in order to prevent the possibility that a vicious cycle may emerge. Careful planning of activities in terms of time and appropriate stages is important in treatment planning. "The task environment directly influences the development of specific skills and habits. It is this knowledge that contributes to the therapist's ability to use tasks therapeutically" (Kielhofner, 1985, p.52).

In terms of prior research, very little was found on the effects of interruption. One study in the field of education investigated the effect of types of interruption on learning and attitudes with an educational self-instructional program (Taworn, 1980). Varying types of activities, including music, were provided during the interruption. The subjects were tested on achievement and attitudes. No significant differences were found on achievement; however, attitudes did differ in reference to one treatment group. The group that received the music only treatment during the interruption showed a significant difference in positive attitude toward the treatment received.

No studies were found specifically on interruption in occupational therapy, but there have been some studies in occupational therapy on the affective meaning of different activity situations. In a study by Nelson, Thompson, and Moore (1982), the affective meanings of four specific activities were investigated. The subjects were given the Osgood 12-scale short-form semantic differential (OSD) to rate different activities. It was found that the four activities studied did elicit significantly different responses. Another study (Rocker & Nelson, 1987) looked at the affective responses to keeping versus not keeping an activity product as measured by the OSD and the Bipolar Profile of Mood States (POMS-BI). The OSD

was used to measure the subjects' affect toward the activity, whereas the POMS-BI was used to measure change in mood before and after activity. It was found that those subjects who could not keep their products became significantly more hostile and energetic than the subjects who kept their product. Regardless of keeping or not keeping their product, all subjects rated the activity highly.

These studies are a beginning to understanding and documenting the affective responses to activities and how they change mood. The hypothesis for this study was: The group who is interrupted in a stenciling activity will have significantly lower scores on the OSD, in terms of evaluation, power, and action, than the group that is not interrupted. The activity chosen was stenciling a greeting card believed to be potentially meaningful to subjects and amenable to control for variables of time and technique in the study.

## **METHODS**

### ***Subjects***

Thirty female non-occupational therapy undergraduate students participated in the study. Students were asked to volunteer in the activity by the researcher and assistant either immediately or arrangements were made by appointment for convenient times. The study took place in an occupational therapy room and each subject participated individually in the study.

### ***Instrument***

The instrument used to measure the subjects' reactions to interruption of the activity was the OSD (Osgood, May, Miron, 1975). The OSD was used to measure the subjects' affect toward the activity session. It contains 12 scales of paired opposites including nice-awful, fast-slow, quiet-noisy, sour-sweet, powerful-powerless, young-old, weak-strong, alive-dead, deep-shallow, big-little, and helpful-unhelpful. There is a 7-point (0-6) rating scale for each of the 12 scales. Scoring results in information on 3 factors: evaluation, power, and action. Evaluation measures the subject's negative or positive feelings toward the named concept; power measures the subject's feelings about the forcefulness of the named concept; and

action measures the sense of speed or movement the subject assigns to the named concept (Osgood & Suci, 1955). Numerous research studies have supported the use of the semantic differential as a valid and reliable method of comparing different concepts in terms of their affective meanings (Snider & Osgood, 1972). See Figure 1 for the rating sheet used.

### ***Procedure***

Three research assistants carried out the research on an individual basis. Subjects were randomly assigned to an experimental group condition, which included interruption of an activity, or a control group condition involving no interruption of an activity. Upon arrival, the subject was asked if she had been informed about the purpose of the study and if so, the subject was dismissed. The activity involved stenciling a greeting card, using three stencils. Techniques were explained and demonstrated, and the subject was allowed to practice until she finished a practice stencil. Choices of four colors were available to make the product more meaningful to the subject. All subjects were told they could keep what they had completed.

The potential product of a greeting card, identical for both group conditions, consisted of the phrase, "HAPPY BIRTHDAY" and a balloon. Each subject stenciled 3 stencils, containing exactly the same shapes. The non-interrupted group completed their product after the third stencil and the interrupted group was interrupted after the third stencil, having an unfinished product. This was possible because the interrupted group used the first stencil on a practice sheet. Therefore, the subjects' second and third stencils applied to the card resulted in an unfinished product at the time of interruption. They had a partially completed design (balloon) and only parts of the words, HAPPY and BIRTHDAY. The objects on the interrupted subjects' first stencil applied to the practice sheet was scrambled to prevent the identification of objects as part of the phrase or balloon design. Interruption involved telling subjects they had to stop and that other items needed to be completed. The OSD, following a specific protocol (Erickson, 1987), was then completed by the subjects to determine their affect toward the activity product.



They were also asked to mark their agreement with the statement, "I want to keep what I have worked on," on a 7-point Likert scale ranging from strongly disagree to strongly agree. After completing the measure, subjects in the interrupted group were asked if they wished to complete their product. Lastly, all subjects were told not to discuss the activity in any way with others because it might influence the study.

## RESULTS

The two conditions of the independent variable, interruption and no interruption, were each tested on three dependent variables. The variables on the OSD were evaluation, power, and action, each of their scores ranging from 0 to 24. A one-tailed independent *t*-test was done on each dependent variable. Results were based on the responses from 30 subjects. See Table 1 for statistical data.

### *Evaluation Factor*

The *t*-test showed no significant differences between the interrupted group and the non-interrupted group,  $t = -1.02, p > .05$ .

### *Power Factor*

The *t*-test revealed significantly lower scores for the interrupted group than for the non-interrupted group,  $t = -1.90, p < .05$ .

### *Action Factor*

Significantly lower scores were found for the interrupted group than for the non-interrupted group,  $t = -2.47, p < .01$ .

In response to the statement, "I want to keep what I have worked on," possible scores ranged from -3 for strongly disagree to +3 for strongly agree. The interrupted group scored an average of 2 and the non-interrupted group scored an average of 2.1.

When the interrupted group was asked if they would like to finish the card, 73% (11 of 15) said "yes," with 27% (4 of 15) saying

TABLE 1. Affective Responses to Interruption and No Interruption of an Activity as Measured by Three Factors of the Osgood Semantic Differential (n = 30)

Factors	<u>Interruption</u>			<u>No Interruption</u>			1-tailed	
	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t-test</u>	<u>p</u>
Evaluation	15	19.73	2.84	15	20.67	2.09	-1.02	.16
Power	15	11.33	3.46	15	13.87	3.85	-1.90	.03
Action	15	12.60	3.14	15	15.33	2.92	-2.47	.01

Note. Scores for each factor range from 0 to 24.

“no.” All the subjects except for 2 out of the 4 saying “no,” took the card with them.

## DISCUSSION

In support of the hypothesis, data revealed that the interrupted group scored significantly lower on the factors of power and action than did the group which was not interrupted. It appears that subjects who were in the process of making their stenciled greeting card and were interrupted, felt the unfinished card to have significantly less power and action. In terms of power, the interrupted group scored the card as being less “powerful,” “strong,” “deep,” and “big,” and in terms of action, the group gave a score of less “fast,” “noisy,” “young,” and “alive.” In order to control for variables of time and effort, specific changes were incorporated into the design of the study. To ensure that each subject would be required the same amount of effort and therefore also controlling time, each subject stenciled precisely the same areas using three stencils. With each subject using the 3 stencils with the same num-

ber of areas to stencil, time was relatively the same for each subject. With these variables controlled for, the significant differences between the two groups indicates that interruption does influence one's affect. The subjects who were interrupted and had a card which was not complete, may have felt they had less power or control.

On the evaluation factor, however, data did not show significant differences between the two groups. Although the means were in the hypothesized direction, the small sample size might explain the lack of statistical significance. The subjects also may not have taken into consideration the interruption when scoring the concept, "the card." It was interesting that in response to the question concerning the degree to which a subject wanted to keep the product, all subjects scored very highly. It appears that regardless of the subjects' affect toward the card at the time of interruption, these subjects still wanted to keep the card as much as the group with no interruption who had a completed card. Also, when the fifteen subjects in the interrupted group were asked if they would like to finish the card, 11 (73%) did complete it. All but two subjects from both groups ( $n = 30$ ) took the card with them. The two who did not take the card were part of the group of four from the interrupted group who chose not to finish the product.

An assumption about the meaning and use of activities is that an individual weights certain activities more than others and that mastery and competence are more readily achieved and have greater meaning to that individual with those activities carrying more weight (Fidler, 1981). If interruption alters affect, it therefore may also influence a client's progress towards mastery and competence. Because of the possible effect of interruption on an activity and how a client perceives and values it, interruption is an important factor to acknowledge and investigate. In conducting activity analysis for a client, interruption may be an additional variable to report.

This study looked at interruption in terms of asking the subject to stop the stenciling activity to fill out a form. Altering the method of interruption, changing the activity, and varying the time lapse before interruption may yield different results. The scores obtained on the OSD corresponded to the tested concept, "the card." Only certain factors were tested, with the OSD being the only measure for

affect. Other affective responses may also be important to determine. Possible areas of future study could include how interruption may effect different populations as well as how it may effect the outcome of therapy.

### CONCLUSION

No occupational therapy research regarding influences of interruption on affect has been reported to date. This study revealed significantly lower scores for the interrupted group on the OSD factors of action and power as compared to the non-interrupted group. One of the basic components of occupational therapy is the use of activities. In order to facilitate a successful therapeutic outcome with activities, activity analysis is essential. Investigating the effects of interruption is one contribution to developing a knowledge base of the influence of activities.

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