THE DIFFERENTIAL LONG-TERM EFFECTS OF CLIENT-CENTERED, DEVELOPMENTAL COUNSELLING WITH INDIVIDUALS AND GROUP

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Abstract

A study involving 541 female students, in four grade levels in an urban commercial secondary school is reported. Each girl was given Super's *Work Values Inventory* (WVI) for the purpose of identifying what developmental sequence their scores might reveal. Rank order analysis was used to identify changes.

No substantial developmental effects were uncovered, although such slight effects as did occur supported the assumption of a maturation trend.

Of particular interest among these data, however, was the degree to which the Grade X group stood apart from the other three grades.

Part of this grade X group had been participants a year earlier in a counselling program. Of these 157 girls in grade X, 31 (down from 36) had experienced client-*centered* developmental individual counselling and 36 had experienced client-*centered* developmental counselling in groups of six. In both cases the sessions had 15 weeks duration. When the WVI scores for these 67 girls were removed, the remaining grade X's scores fitted the overall maturation patterns expected.

Not only were the counselled girls distinctly different from their age peers, but also the recipients of each counselling modality were distinctly different from each other in rank order of their average profile raw scores. These differences seemed to be more related to the nature of the counselling sessions than to maturation.

It was concluded that individual and group counselling have distinctively different effects, and that these effects tend to last for extended periods (at least one year) without reinforcement.

These findings emerged from the results of atypical statistical procedures developed by one of the authors and are clearly contradictory to the common finding that no differential effects among modalities exist, and that effects tend to extinguish with time.

Implications for counselling practice and future research are drawn.

Résumé

On fait un rapport sur une étude qui concerne 541 étudiantees à quatre niveaux d'enseignement dans une école secondaire commerciale urbaine. Chaque étudiante a écrit *The Work Values Inventory* (WVI) de Super afin d'identifier quelle suite de développement est révélée par les résultats obtenus. On a utilisé l'analyse d'ordre absolu afin d'identifier ces changements.

Cette étude n'a révélé aucun effet pertinent de développement. Cependant, les quelques effets qu'on peut déceler appuient la présomption que le degré de maturation chez l'individu exerce une influence.

La différence significative entre les résultats obtenus par les étudiantes de la 10e année et ceux obtenus par les étudiantes des trois autres années revêt un intérêt tout à fait spécial. Certaines étudiantes de la 10e année avaient participé un an auparavant à un programme de consultation. Des 157 jeunes filles de ce grade, 31 avaient fait l'expérience de la consultation individuelle dite "client-centered". Un deuxième groupe de 36 étudiantes avaient eu la même expérience mais cette fois-ci, en groupe de six personnes. Dans les deux cas, les séances avaient une durée de 15 semaines. Quand les résultats obtenus par ces 67 jeunes filles sur le WVI furent enlevés du groupe total de la 10e année, les autres résultats pour ce niveau s'apparentaient à la séquence prévue de développement.

Les jeunes filles qui avaient participé à ces stages de consultation étaient nettement différentes de leurs pairs. De plus, celles qui avaient reçu cette consultation se différenciaient les unes des autres selon l'ordre absolu de leurs résultats bruts. Ces différences paraissent être liées plutôt au genre de séances de consultation qu'au développement.

On conclut que la consultation individuelle et en groupe produit des résultats distinctement différents. Ces résultats tendent à se prolonger pendant une période continue (au moins pendant un an) sans renforcement.

Ces découvertes se dégagent de procédés statistiques atypiques développés par un des auteurs. Elles sont clairement contraires à la conception commune qu'aucun effet différent existe parmi les modalités et que ces effets viennent à disparaître après une certaine période de temps.

Enfin, on dégage, des implications pour la pratique de la consultation et pour les recherches à venir.

INTRODUCTION

The statement by Dinkmeyer and Muro (1971) that more matching of counsellor capabilities to client needs introduces the concept of differential effects begs the questions, "What are these differential effects and how are they to be determined?"

In the usual procedure for studying differential effects, comparisons are made on a variable-by-variable basis. Interactions among variables can be obtained, but these become increasingly difficult to interpret as the number of variables entering into the interaction increase. Conjoint and other non-linear relationships cannot be found using the usual procedures (Sockloff, 1976).

In general, educational and psychological research has not been very successful in finding any differential effects among interventions. Perhaps this occurs because the magnitude of the treatment effects overwhelms any differential effects. These latter effects may be subtle in their occurence. It may be that the statistical procedures commonly employed are not powerful enough to detect differential effects. It may also be, that these effects combine in a non-linear manner, in which case, the statistical procedures commonly used would be inappropriate for the detection of any differential effects which might be present.

Using alternatives to the usual procedures, Stoten and Goos (1974) found differential effects among three different counselling strategies using the same client for each strategy. Powell and Cottrell (1975) found differential effects among different teaching procedures, and Wearne and Powell (1976) found indications of possible differential effects when the more usual procedures were used. Each of these studies used profile comparison procedures in order to arrive at the conclusions drawn.

Using much more elaborate procedures, Powell (1968); Powell (1970); Powell and Isbister (1974); Powell (1976); Powell, Cottrell, and Lever (in press) and Powell (1977) have repeatedly found differential and non-linear effects under educational and developmental conditions.

An adaptation of this alternative (matching) approach was also used in the present study.

The purpose of this study was two-fold. First, the concern was to attempt to establish a clearer picture of the maturation of the "vocational self" (Super, 1970) among 541 adolescent females enrolled in grades nine through twelve in a commercial secondary school. Second, there was a possibility that 67 of the girls still enrolled in this school, who had undergone client-centered developmental counselling (either individually or in groups) one year earlier, might still display some effects of the impact of that intervention. Thus, this present study, is part of a continuing series of explorations into the affective aspects of development.

Furthermore, this present study was designed to address the following five hypothetical issues.

1. There is a change in work values related to increasing maturity.

2. Grade X female students who have undergone client-centered, developmental counselling (Seeman, 1963) a year previously hold some work values which differ from the students of the same grade who did not receive such counselling.

3. Grade X female students who have undergone client-centered, developmental counselling individually differ in some work values, a year later, from grade X female students who underwent client-centered, developmental counselling in groups.

4. Work values held by female students of grades IX, X, XI and XII who have not recceived counselling reflect a reasonable developmental sequence.

5. Grade X female students show long term effects of client-centered developmental counselling as manifest by their measured work values one year subsequent to intervention.

METHOD

Subjects

The subjects consisted of 539 female students in an urban, commercial secondary school. Distribution of the subjects into their several groups is indicated in Table 1.

PROCEDURE

The present study follows an earlier one.

Study 1

In the first study (Wearne, 1973) 108 female students were assigned to either experimental or control groups based on scores on Heilbrun and Sullivan's (1962) "counselling readiness scale" of the Adjective Check List (ACL). Subjects were randomly assigned to one of three groups destined to receive individual counselling, group counselling, or no counselling, with N = 36 per group. Subjects to receive counselling entered a client-centered, developmental counselling environment. The individual counselling sessions were held once per week, and group counselling sessions twice every week. Counselling contacts were of 30 minute duration, over a period of 15 weeks. Group counselling occured in groups of six.

Study 2

One year after counselling was completed, Super's Work Values Inventory (WVI) was administered to the total female population of the school. The gathering of these data are reported here.

To begin with, the assumption was made from the central tendency theorem, that average ranks of a group are more stable and more representative of a group than individual ranking would be. Therefore, the average rank for each group on each of the 15 values in WVI were calculated. To compare the groups, rank order correlations between each pair of groups were found. These correlations were expected to be high.

The major intergroup differences in ranking were used to explain departures from correlations of +1.00 between groups.

It was presumed that these differences would reflect either a possible developmental sequence, or the possible long term effects of the counselling intervention.

In order to have some certainty that departures were genuine, both the magnitude of the rank shift for the particular group and the variability of that particular value as to rank among all the groups was taken into account in the selection procedure.

Table 1

Distribution of Students by Group

Group Composition	Treatment	Number of Members	
Grade IX	nil		145
Grade X	nil	90	
Grade X	counselled individually	31	
Grade X	counselled in groups	36	
Grade X composite			157
Grade XI	nil		126
Grade XII	nil		111
			537

STATISTICAL PROCEDURES

In Super's WVI 45 statements are rated on a 5 point preference scale. These are then scored under 15 work values, each containing three items. The score for each value is the sum of the numerical preference (with 5 being highest) assigned by the respondent to each item in that value. Thus, the basic data are ordinal in nature.

Between group comparisons were the major concern of this study. It was, therefore, assumed (upon the basis of the central limits theorem) that the average score for each variable of all members in a particular group would be the most stable representation of the level of preference of this value for that group. It was also assumed that the rank order of these means would be the most stable representation of the level of preference of this value for that group and that the rank order of these means would be the most representative profile of these values for the population. Differences among groups would be best reflected by departures of group means from the population mean.

By retaining the ordinal nature of the data at the level of the group means, the paired similarities among the seven groups could be obtained using the rank order correlation (Spearman's RHO) for the ranked values between each pair of groups.

This correlation is dependent upon the squares of the differences between the ranking of the same variable between observations. Using this information, dissimilarities between groups can be largely explained in terms of the variables having the largest between group displacements in the ranking of those variables.

At this point the researchers made a hypothetical leap. It was assumed that because between group differences could be explained as just indicated, overall departures from the general pattern in the total population could be explained in the same manner. Although this assumption may be reasonable, the departure from current practice which it represents implies that all findings in this study must be considered as tentative and exploratory.

This second order procedure initially involved finding the average of the average ranks for each variable across the entire population in the study. Second, it involved ranking these new averages and calling this ranking a BASELINE profile for the population. Then the displacements between each group and the baseline could be compared. Thus, it was hoped that comparisons between the population as a whole and each group within that population could be made. This approach would be an alternative to comparing each group in a pairing fashion with all other groups. The baseline to group comparison might possibly give a simpler and clearer indication of possible overall trends than could be obtained from the complex of isolated between group comparisons which would, more commonly, be made.

If the procedure was reasonable, systematic trends across the population should be revealed by it.

This procedure might not have worked as well as it did, had not most of the correlations been high.

RESULTS

In general, five of these seven groups appeared to be very similar in the rank orders of the average ranks for each variable. Table 2 gives the rank order correlations between the groups.

The closest pairs were grades IX and XII ($r = .96$) and the non-counselled (10 N-C) part of grade X and grade XI ($r = .96$). Taking all the grade 10's as a single group produced lower correlations than occur among the 9, 10 N - C, 11, 12 combination. The grade X individually counselled (10 I - C) group was somewhat further removed from the pack and the grade 10 group counselled group (10 G - C) further away again. Using 15 variables in the correlation equation gave a value of $r = .55$ at the $p = .05$ significance level for meaningful correlations. It would seem that the 10 G - C group may be unrelated in their ranking of work values to any of the other six groupings of this population.

It should be noted that if the grade X composite correlations were ignored, three non-overlapping ranges of correlation can be observed from this table. First, the four groups upon whom no intervention was attempted (9, 10 N - C 11 and 12) intercorrelations ranged from + .88 to + .96. Second, intercorrelations of the 10 I - C group with these other four ranged from + .68 to + .83. Third, no significant correlations were found with the 10 G - C group and any of the other fine groupings in the population. Presumably then, the small but significant correlation of 10 G - C with 10 composite of +.59 was actually a residual correlation with itself.

TABLE 2

Rank order correlations among groups on their ranking of the 15 WVI subscales.

Group	10	11	12	10 N-C	10 I-C	10 G-C
9	.85	.89	.96	.88	.83	.25
10		.85	.82	.91	.74	.59
11			.91	.96	.77	.32
12				.88	.68	.18
10 N-C					.79	.50
10 I-C				.		.21

Departures from baseline may give some indication as to why these relationships occur. The order of the values was the rank order for the population. The position of the baseline was the numerical value of the average rank for all seven groups in the population. Only the largest departure from baseline was considered for each variable. In three cases out of the 15, two groups shared the same absolute value of this largest displacement.

Achievement was rated highest by the total group, and management lowest. The grade nine girls appeared to be lower than all the rest in the ranking of Achievement and Surroundings, and higher than all the rest in ranking Associates. Grade XI girls ranked Prestige lower and Intellectual Stimulation higher than any other group. Grade XII girls ranked Security lower and Economic returns higher than all the other groups. However, the ranking of Security was quite inconsistant for all seven groups within the limits of the range shown so that the low ranking of this value may not be particularly meaningful. A similar observation can be made for Altruism which was ranked second by both the 10 N - C and the 10 G - C groups but was also broadly variable, being ranked between the limits of second and sixth place. The differrences in the rating of Management were too small to be meaningful.

Among the other variables, the composite of all grade 10's ranked Supervisory Relations first. The individually counselled grade 10's rated Variety and Independence substantially higher than the population as a whole, and the group counselled grade 10's rated Creativity and Esthetics substantially higher and Way of Life substantially lower than the population as a whole. Some ideas of the narrow range and high value placed upon the Way of Life variable by the other six groups can be gained when it is remembered that this value-overall was in fourth place — containing a 15th place rating of the 10 G - C girls in the computation of the overall average.

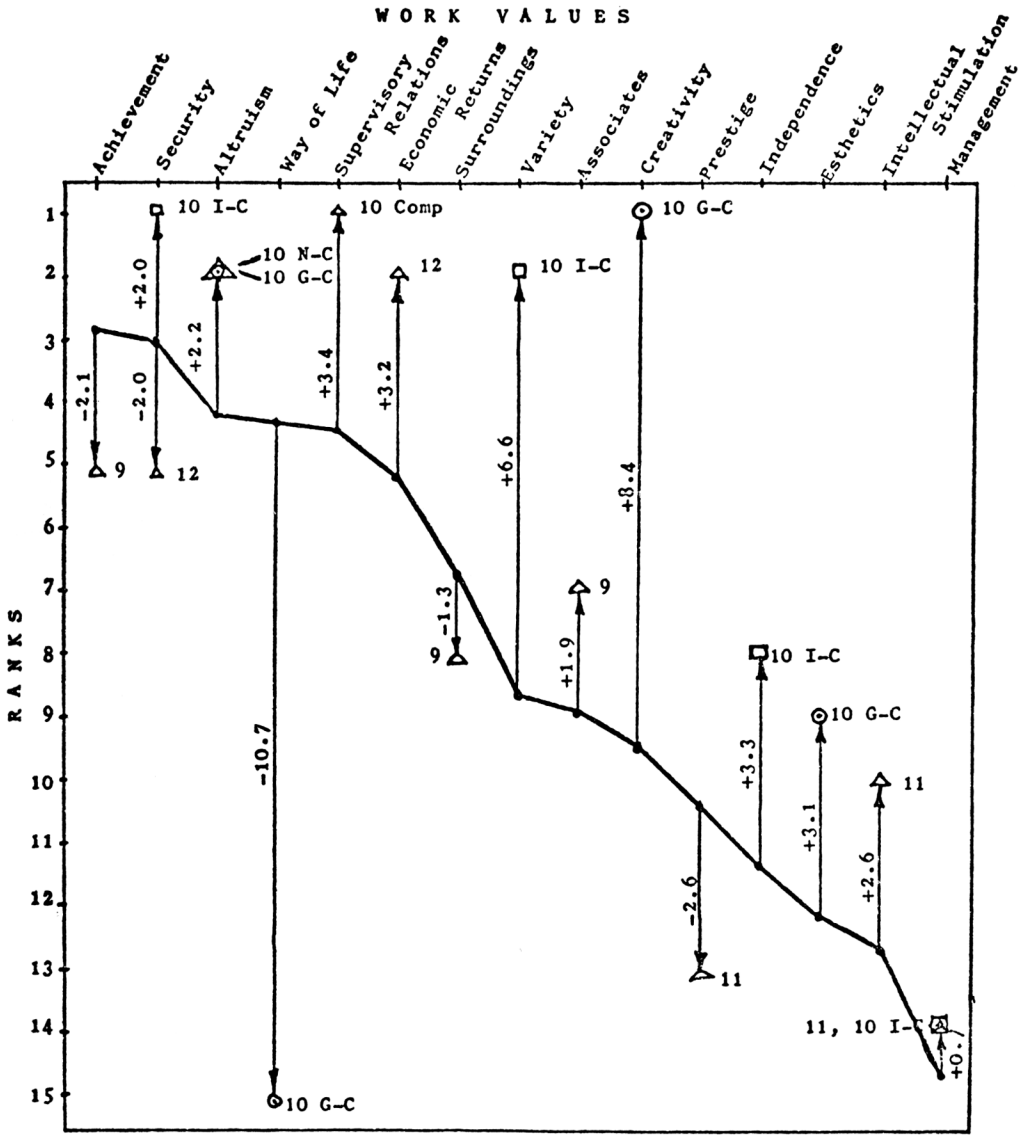
In order to attempt to get a picture of these relationships, the cluster analysis procedure, using the minimum algorithm from the BMD package, was used to rearrange the correlation matrix. Figure 2 gives both a visual and a tree pattern picture of these results.

The relatively small departures from the baseline found among the four basic groups IX X N - C, XI, and XII) as presented in Figure 1 reappear here as relatively homogeneous clusters. The departure of the composite of all grade 10's would seem to reflect the correlation matrix more so than the data from Figure 1. The relatively large departures of the 10 I - C group found in both the correlation matrix and among the displacements is seen here once again. The substantial displacement differences and correlation differences with the 10 G - C among the other variables is also evident in Figure 2.

An additional observation was found to be interesting. The arrangement of the correlation matrix produced by this cluster analysis procedure has the properties of a Simplex (Guttman, 1956) Scale. Among the non-treated groups only the grade nine group was out of chronological order. Using an analogous procedure for nominal data in the cognitive domain, exact replication of the age sequence occurred for 8 to 14 + year olds (Powell, 1977).

Figure 1

Displacement from average rank of each work value for all groups for the group(s)* with the largest displacements.



* For three of the Work Values there were two groups with the same absolute displacement.

BASELINE (Average rank of the Work Values among all groups.)

Individually Counselled Group (10 I-C).

Group Counselled Group (10 G-C).

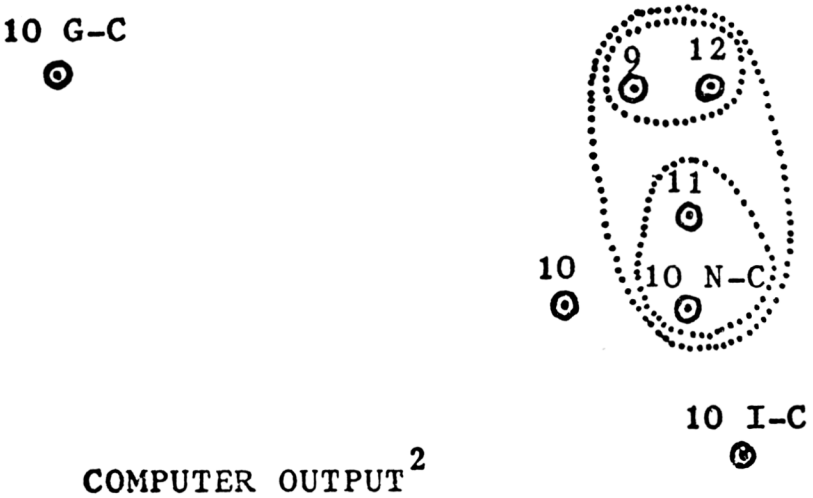
All Other Groups (9, 10 N-C, 10 Comp, 11, 12).

-3.7 12 Group with the largest displacement.

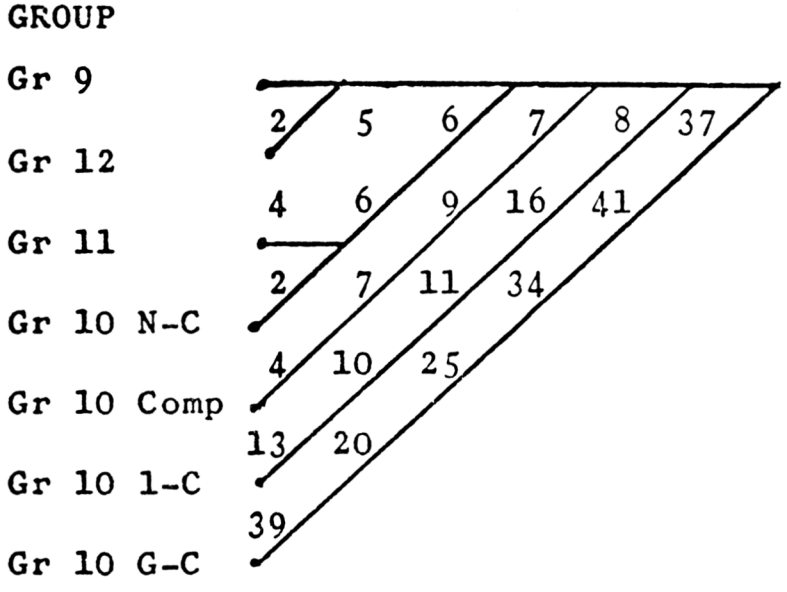
Amount and direction of the largest displacement.

Figure 2

Two Dimensional Representation[1]
of Minimum Algorithm Cluster Analysis
Distance = 50x(1.00-Correlation)



COMPUTER OUTPUT[2]



NOTES

[1]Points are the centroids of the intercepts of arcs drawn to a uniform scale.

[2]The distances on this tree are diagonally arranged. For instance, the distance between Grade 10 Group Counselled and Grade 11 is 34 units on the ordinal scale represented here.

DISCUSSION

To begin with, the ranking of these 15 variables across the whole population used in this study is in itself interesting. The population polarizes Achievement (first) and Intellectual Stimulation (fourteenth), suggesting a very conservative overall outlook among these girls — "women's lib" notwithstanding.

Other evidence for this conservatism may be found in the high placement of Security, Way of Life, Economic Returns, and Surroundings and in the low placement of Creativity, Prestige, Independence, Esthetics, and Management.

The high placement of Altruism and the low placement of Associates is somewhat contradictory suggesting a degree of idealism and, perhaps, a limited amount of venturesomeness among this population.

It would seem that a week developmental pattern may have been found. The grade nine girls were found to be somewhat less Achievement and more Associates oriented than the baseline. Perhaps this reflects an inclination toward peer group orientation. The 10 N - C group did not seem to depart in any meaningful way from the baseline. Grade XI girls seemed to be somewhat more concerned with Intellectual Stimulation and somewhat less concerned with Prestige than baseline. Perhaps they are becoming concerned with the development of a marketable competence. The grade 12 groups seem to rate Economic Returns higher than baseline (placing it second rather than sixth) which suggests that this group may be looking toward future employment more than the rest.

This observed developmental sequence seems reasonable, but it is based upon a procedure of unproven validity and must be carefully qualified as to its tentative nature. Further investigation in this area is needed.

A somewhat stronger trend would seem to be present with the 10 I - C group whose positive shifts toward Variety and Independence make sense with respect to nature of the one-to-one developmental counselling procedure used. This pattern also makes sense in relation to the observations from Wearne and Powell (1976) who found that a post-test immediately following intervention on the Tennessee Self-Concept Scale TSCS (Fitts, 1965) showed these girls (then in Grade IX) to have changed more than the 10 G - C and 10 N - C groups on Total Self-Concept, Self-Satisfaction, Behavior, Physical Self, Personal Self and Social Self. These differences between 10 I - C post and 10 I - C pre were all significant at the .005 level being further supported by the significant differences between the I - C and N - C groups. There were no significant differences found between 10 I - C and 10 G - C girls. Tentatively making an assumption that Total Self-Concept, Self-Satisfaction and Personal Self are related to Independence and also that Behavior, Physical Self, and Social Self are related to Variety suggests that there is a relationship between those two observations. In this case, the observed differences may be a product of the intervention and these differences may last for a considerable time (at least one year). It should be remembered, in this context, that all of the 10 I - C group who were given the WVI had remained in the same school wherein the original study (Wearne 1973) was conducted and therefore peer influence would be expected to diminish the influence of intervention.

We cannot do more than present reasonable speculations concerning the relationships between the variables on the TSCS and the WVI since the WVI was not used in the original study. Further research into this matter is needed.

All that can be said, and very tentatively at the moment, is that client-centered developmental individual counselling might possibly make a lasting difference with grade nine girls. There is also a possibility that individual counselling may make the recipients of it more self-directing in outlook.

There seems to be a substantial trend for the 10 G - C girls to be different in outlook from their classmates, one year after intervention. Their points of greatest departure from pretest scores on the TSCS (Wearne & Powell 1976) were Identity, Moral-Ethical Self, and Family Self since all were significant, at least at the .01 level and Self-Criticism at the .05 level. Once again, there were consistent significant differences with the 10 N - C girls but none from the 10 I - C girls.

On a purely speculative basis, there may be relationships between Self-Criticism and Identity on the TSCS and Creativity on the WVI; between Moral and Ethical Self and perhaps Family Self of the TSCS and Esthetics on the WVI, and between (low values of) Self-Satisfaction, Behavior, Personal Self, and Social Self on the TSCS and Way of Life on the WVI. If these speculations can be substantiated with further research, then a trend immediately evident after intervention may last for considerable time (at least one year). This possibility might explain

the substantial observed differences among the 10 G - C girls which was found among the present data. These girls also remained in the same educational environment during that year.

All that can be said at this point is that client-centered, developmental group counselling would seem to make lasting changes with grade nine girls. It would seem further that group counselling may possibly have an effect different from individual counselling in that it may make the recipients of this intervention more venturesome in outlook. Further research on this issue is needed.

The present study does not explain why group counselling seemed to produce more substantial differences than individual counselling. Perhaps this effect occurs because grade nine girls may be more peer oriented than other groups as suggested by their higher rating of the Associates variable. Perhaps this event occurred because each girl in group counselling was in a counselling session twice as long as was each girl in the I - C group. However, the groups were composed of 6 girls each, so that another way of looking at the G - C sessions was that each girl had one third of the average interaction time available to girls in the I - C modality. Perhaps Zander's (1974) findings, that people generally work harder for the achievement of group goals than for their own personal goals, explains this event. Further research is needed to clarify these relationships, however.

CONCLUSIONS

All findings reported in this study must be taken as tentative, because the procedure used departs from common practice in matters of unknown consequence.

Considering the hypothetical issues raised it would seem that:

1. There may be a weak developmental trend among girls with respect to their vocational self-concept when left to their own devices.

2. The significant differences in self-concept found after intervention (Wearne 1973, Wearne and Powell 1976) might possibly relate to differences found between these girls and the balance of the girls in the same school one year later.

3. The differences between the 10 I - C and 10 G - C which seemed to be present one year after intervention might possibly be related to a non-significant pattern of differences which seemed to be present immediately following intervention.

4. The pattern of development among female students who did not receive counselling would seem to follow a reasonable developmental sequence.

5. It is possible that the differences observed among the grade ten I - C and G - C girls might be a manifestation of the impact of client-centered, developmental counselling, observed by measuring their work values one year subsequent to intervention.

These five conclusions can be no more than tentative at this time. Considerably more research is needed to clarify the many unanswered questions raised by the observations herewith reported. To be specific, it is impossible from the present study to draw any conclusions about direct cause-effect relationships since the appropriate relational data are not available. The relationships which might be inferred, including the possibility that group counselling may be more powerful with ninth grade girls than individual counselling, can not be considered to be more than hypotheses which need further testing.

Another tentative hypothesis must also be considered. Powell (1976) has shown conclusively that the commonly used linear statistics are not appropriate for studies involving cognitive development since cognitive development should not be considered to be continuous and additive, but discontinuous and qualitative. That is, cognitive development progresses in a sequence of qualitatively different phases and stages, displaying curvilinear and conjoint relationship with time. It is possible that aspects of human development other than cognition also progress in a non-linear fashion. This possibility might render the commonly used statistical procedures invalid for all studies pertaining to human development. At least, it would seem, in this study, that differential effects were found when procedures which depart from common practice were used. This same observation, that differential effects are either observed or implied, has been made among all the differential effects studies quoted (Powell 1968; Powell 1970; Powell and Isbister 1974; Stoten and Goos 1974; Powell and Cottrell 1975; Powell 1976; Wearne and Powell 1976; Powell, Cottrell and Lever, in press and Powell 1977). Since Powell, Cottrell and Lever (in press) report three separate studies not included elsewhere in this list, a total of eleven studies are accumulated, ten of which display statistically significant differential effects. The study which failed

to show these effects significantly (Wearne and Powell, 1976) implies such differential effects.

Among other conclusions which this study would seem to imply is that the statistical procedures now commonly used might possibly be inappropriate for research dealing with human problems. At the moment, it may still go either way. Refutation of the differential effects hypotheses drawn here would reduce the stature of this latter possibility. Proving that the commonly employed linear statistical procedures are inappropriate for studying human development would raise the stature of these hypotheses more nearly to the level of findings.

Clearly the ramifications of these present explorations are interesting whatever the final outcomes might be. It makes logical sense that differential effects should occur. That they have not been found can occur for one of two reasons. Either, statistically significant differential effects do not exist, or the procedures being used to find differential effects are inappropriate for the nature of the data under study. For those of us who are still on the fence in this issue, which way is further research evidence going to force us to jump? Obviously, more "explorations" are needed.

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