

TEST OF HACKMAN AND OLDHAM'S JOB CHARACTERISTICS MODEL
IN A POST-SECONDARY EDUCATIONAL SETTING

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(submitted in partial fulfillment of the
requirements for the degree of
Master of Education)

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September, 1988

Acknowledgements

I would like to thank Dr. Robert Knoop for his help and encouragement as my thesis advisor and Dr. Michael Kompf and Dr. Sybil Wilson for acting on my thesis committee.

I would also like to thank my family - my husband for his encouragement and support, and my children for their interest and encouragement in pursuing my personal goals.

Finally, I would like to acknowledge the assistance that has been offered me by the faculty and administration of Mohawk College of Applied Arts and Technology through their support and participation in this project. This project was started as a result of the high levels of motivation and work performance I perceived present in the Academic faculty at this college.

Abstract

One hundred and seventy-two subjects participated in this quantitative, correlational survey which tested Hackman and Oldham's Job Characteristics Model in an educational setting. Subjects were Teaching Masters, Chairmen and Deans from an Ontario community college. The data were collected via mailed questionnaire, on all variables of the model. Several reliable, valid instruments were used to test the variables. Data analysis through Pearson correlation and stepwise multiple regression analyses revealed that core job characteristics predicted certain critical psychological states and that these critical psychological states, in turn were able to predict various personal and work outcomes but not absenteeism. The context variable, Satisfaction with Co-workers, was the only consistent moderating variable between core characteristics and critical psychological states; however, individual employee differences did moderate the relationship between critical psychological states and all of the personal and work outcomes except Internal Work Motivation. Two other moderator variables, Satisfaction with Context and Growth Need Strength, demonstrated an ability to predict the outcome General Job Satisfaction. The research suggests that this model may be used for job design and redesign purposes within the community college setting.

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CHAPTER ONE

Introduction

What are the characteristics of a job that make people want to perform it to their maximum ability? Do people work because of the rewards, the working environment, or the nature of the work they are doing? Motivation has been the topic of much research related to work productivity and employee satisfaction. J. Richard Hackman and Greg R. Oldham have developed a model which specifically addresses job design. The model relates job characteristics to psychological states and personal and work outcomes. It can be used to predict whether positive work and personal outcomes can be achieved from a job as it exists or with redesign.

Hackman and Oldham (1980) stated that "the person-job relationship is key in understanding both organizational productivity and the quality of employees' work experiences" (p.19). They point out four facts about person-job relationships which provide a beginning for this discussion.

1. Many people are underutilized and underchallenged at work as they have more to offer employers than the employers ask. Employees have needs and aspirations that cannot be satisfied by the work they do. The conclusion that can be

drawn from this observation is that many employees are willing to do more if given the opportunity. As matters exist, there is a poor fit between large numbers of people and the work they do.

2. People are able to adapt to their environment readily, be it a living or work environment.
3. Self reports of job satisfaction are not reliable because workers may delude themselves that they are satisfied in order to justify staying with the same job and not seeking a change. More objective indicators of how satisfied employees are include: productivity, work quality, absence and turnover rates, degrees of utilization of employee talent and overt signs of high commitment among employees.
4. Change will often be resisted even when it is a good idea. Change poses a threat and can expose to workers their dissatisfaction with a job which is even more threatening than the change itself. They may be asked to learn new skills or procedures and thus have a comfortable routine upset. (pp. 12-19)

Understanding the relationship between employees and their jobs is basic to understanding both organizational productivity and the quality of the employees' work. It should be the first variable examined when attempting to develop an organization which is staffed and managed so employees are simultaneously utilized

and satisfied to the fullest extent and where neither the goals of the organization nor the personal needs of the employees override each other.

Traditional approaches towards organizational behaviour focused on changing the people within the organization to some degree. Hackman and Oldham (1980) discussed four of these. The first approach centred around changing the workers through improved selection, placement and training procedures. This approach assumed the workers were underqualified when indeed the opposite was often true and the workers were underutilized in poorly structured jobs. This approach was probably the most often used approach and had negative consequences for both employees and the organization.

The second most popular approach was the attempt to change others within the organization, specifically the supervisors, again with improved selection and training. The problem here was that it has never been clear what it is supervisors should be taught and most find it difficult to transfer training from the classroom to the actual job setting.

A third approach considered the context in which the work was performed by adding workplace amenities and improving scheduling of working time. Although this may have reduced absenteeism and turnover to a limited extent, Herzberg (Herzberg, Mausner, & Snyderman, 1959) stated clearly in his Motivation-

Hygiene theory that these factors were hygienic, meaning that they can only detract from workers' motivation, not add to it. The most that could be expected from such changes in the environment was some short-term positive employee reaction, but this did not compensate for work which was meaningless, inadequately paid and in which employees felt they had no control.

The fourth approach, often used as a "quick fix", involved changing the environment by changing the contingencies that determine the benefits to employees of hard and effective work. Herzberg (Herzberg, Mausner, & Snyderman, 1959) identified these factors as hygienic and having no long term motivating potential.

Pinder (1984) said that many employees are better educated and more affluent these days which means their survival needs are less salient, and growth needs are stronger. Many workers have a higher education which adds strength to their growth needs. Dull, repetitive work is now more frustrating to a greater proportion of the workforce. Absenteeism, tardiness, turnover, sabotage and union activity result from need frustration, making it comparatively more expensive for management to design jobs as they have been, while expecting employees to respond positively. There has been a shift in the western economy from production toward service industries, increasing the number of managerial, professional and technical jobs, making it necessary for employees to be more autonomous and self-directed. These jobs stress

flexibility, spontaneity, creativity and defy rationalization and the establishment of strict routines.

Hackman and Oldham developed the Job Characteristics Model to diagnose and design jobs to fit employees. When applying this model to the Academic faculty of a community college, its strengths are immediately apparent. Hackman and Oldham, as well as Pinder (1984), acknowledged the need to assess job design before embarking on changes. The assessment must follow a theoretical model as must the change process. This model provides a mechanism for assessment and change, if it is needed. Work motivation can be enhanced by increasing levels of responsibility, meaningfulness of the work and feedback which the worker receives; more so if these are built into the job. The theory deals with individuals and groups separately, not assuming that group function is the same as a collection of individuals. People, of course, react differently to jobs depending on their needs and developmental stages or life tasks (Erikson, 1950).

If this model can be demonstrated to be valid in a community college setting then it may be used as a basis for analysis and enrichment of teaching jobs. This study will test the model in a community college to see if the model can be applied as predicted. Its application in an educational setting has been limited to two studies (Knoop, 1981; Levanoni & Knoop, 1985) and these were not tests of the model itself. If the model can be demonstrated to

be valid in a community college setting then its prescriptive properties may be used for job design and redesign.

Hackman and Oldham (1980) stressed that employees who are well matched to their jobs will work harder because of internal motivation. Pinder (1984) described internal motivation as "behavior which is performed for its own sake, rather than for the purpose of acquiring any material or social reward" (p. 58). It is not necessary to coerce, bribe or otherwise influence workers to put forth effort into the work. They will experience an inner satisfaction from performing well and this feeling will serve to motivate them to continue with a high level of performance in a continuous cycle of work-reward. Because the cycle is self-generated, it is a more powerful reinforcer than external reward. How then to create a job that will allow workers to function at this level? The Job Characteristics Model provides an answer to this age old question.

CHAPTER TWO

A Review of the Literature

Introduction

The literature was reviewed to examine research evidence concerning the development and use of the Job Characteristics Model and to discover if the model had been replaced by another theory of work design. The sources of literature review included computer searches in Eric, Psychological Abstracts, Psycinfo and ABI/Inform indexes; cumulative indexes in nursing; reviews of research in organizational behaviour and references cited in publications between 1970 and 1988. The literature was also examined to investigate what theories of work design had been applied to the educational setting and whether any of these were specific to post-secondary education.

Extensive research material was found on the development and use of the Job Characteristics Model in industry and technology but very little on its use in other settings. Applications of the model in nursing and education have been cited in this review. Recent trends in work design have been analyzed and described.

The first part of this chapter will review the theories of work design which were used in industry and technology until the introduction of the Job Characteristics Model. The model will be

examined in detail including subsequent research duplicating the model. Recent developments in the field of work design will be analyzed. The final portion of the chapter proposes the hypotheses which have been developed as a result of the review of the literature.

Classical Approach

In classical organizational theory, operational efficiency was the chief objective. Organizations were structured to have clear, unambiguous channels of authority and a centralized command. Rules and regulations co-ordinated work activity lessening the chance of independent action by middle management. "Span of control" determined that managers had neither too many nor too few people under their control. The ideal work group contained ten employees. Tasks were broken down to simplified segments. The principle "division of labour" was utilized to ensure employees worked efficiently and effectively, although Hackman and Oldham (1980) pointed out that overqualification of workers for these simplified jobs may have sabotaged production goals as the workers were underutilized and became bored, leading to a subsequent decrease in production.

Frederick Taylor is considered the father of the scientific or classical management theory. The principal tenet of scientific theory was to maximize effective use of the workers in industrial organizations. Individuals were seen as machines, programmed with

the expectation that they could achieve the same efficiency as machines. Workers were units of production, motivated by economics, limited by physiology, and in need of constant direction. Job design focused on physical production, consequently time/motion studies were a popular means to ascertain the fastest method for completing a task. Although the scientific approach ignored psychological and sociological influences, it did demonstrate and prove that many jobs could be performed more efficiently. The major advantage of the scientific approach was that it helped unskilled workers improve production (which was rewarded financially) to close to that of skilled workers. Scientific management was the forerunner to the field of industrial engineering.

Human Relations Approach

The human relations approach, developed in the 1920's and 1930's, gave consideration to the relationships of people and groups within organizations and identified the positive, harmonious aspect of dynamic relationships. Conflict was seen as a normal process which highlighted the differences between people (Follet, 1924).

The Hawthorne studies (Roethlisberger & Dickson, 1939) were originally conducted to test light levels at work stations but instead became a study of group psychological behaviour and social relations. The researchers concluded that:

1. workers responded to the experimental stimuli as a group, not as individuals, each group with its own norms and sanctions.
2. the group provided protection against management and was the vehicle for interaction with management;
3. informal leaders evolved in each group and had the potential ability to interfere with the management task of the designated supervisor; and
4. individuals within the groups acted as human beings not as machines.

Behavioral Sciences Approach

The Behavioral Sciences approach expanded upon the elements of the human relations approach by adding ideas drawn from psychology, sociology, political science and economics. The objective of the behavioral sciences approach was to design work in a way that achieved high productivity without incurring the human costs that were associated with the traditional approaches. The concept of motivation as an internal force driving employees to want to work by making the task meaningful was introduced. Several theories were developed in this area, each generally building upon a previous theory.

Job enlargement was the first theory to be developed and simply increased the variety of tasks a person did at work. The stimulation from such variety reinforced employees' work behaviour

leading to greater productivity which contrasted with job enrichment theory which proposed that increased production resulted when workers felt they had increased responsibility for a "whole" job rather than a segment of a "whole" job. Seeing the outcome of their work gave workers a sense of achievement not obtained when work was fractured to small segments. Herzberg (1968) maintained that job enlargement simply added more tasks to the employees' work. Job enlargement expanded the meaninglessness of the work by giving them more to do but removing the possibility of any sense of accomplishment as it was impossible to complete all the tasks within a job. Work tended to remain simplistic and the job enlargement approach did not consider individual differences in workers' behaviours and needs. Some workers did not enjoy the added burden of more work preferring instead to daydream or pursue some task of their own choosing concurrently.

Herzberg's Motivation-Hygiene theory (Herzberg, Mausner & Snyderman, 1959) was an alternative to job enlargement and the first theory of job enrichment. Herzberg identified motivating factors which promoted job satisfaction as separate and distinct from hygienic factors leading to dissatisfaction with work, yet he demonstrated that the two states were not necessarily opposite each other. The hygienic factors were found in the job environment (extrinsic to the job) while the motivating factors were found within the content of the job (intrinsic to the job).

The biggest criticism with Herzberg's theory lay with the inability of other researchers to provide empirical support for its major tenets (Hackman & Oldham, 1976). Measurement of the motivator and hygienic factors was a problem and it was difficult to implement any kind of change in job design because of this measurement difficulty. Pinder (1984) commented that Hackman and Oldham included the positive aspects of Herzberg's theory in their Job Characteristics Model.

Activation Theory (as discussed in Hackman & Oldham, 1976, 1980) considered the structure of the work task itself. A repetitive job provided little stimulation for employees resulting in low "activation" potential and a decline in the workers' interest. It was found that workers who were insufficiently active at work engaged in behaviours which stimulated them physically and mentally but which detracted from the performance of their assigned task. Three dimensions determined the "activation potential" of a task:

- a) magnitude of the stimulation provided by the task,
- b) variation of the stimulation, and
- c) the number of the worker's senses which were stimulated by the task.

Consideration of the activating potential of a task gave guidance for the structuring of jobs. The theory was useful for identifying jobs which were grossly unsuited for workers because

of underactivity which caused the worker to seek out arousal-enhancing behaviour. Activation theory did not take into account the individual differences in the workers' needs for activity. Levels of activation inherent in a task were difficult to measure. People adapted quickly to any changes in the level of stimulation, particularly as they became experienced with the job. Activation theorists advocated rest periods or job rotation to help prevent diminished "activation potential" caused by familiarity with the task. Hackman and Oldham (1980) advised that in time, despite these tactics, the "activation potential" of a job reverted to its former decreased level. Managers found it difficult to determine the "ideal" level of activation for different tasks so that optimum production was achieved without mistakes or errors in performance.

Systems Approach

The Systems Approach considered the work environment, stating that work occurs within organizations, the organization is a social system affecting the work and work must be designed with consideration to the organizational setting. The Sociotechnical approach to organizational behaviour emphasized creating work systems in which social and technical aspects were integrated and supportive of one another. The Sociotechnical approach was discussed by Katz and Kahn (1978). Its origins can be traced to the work of Emery and Trist in the coal mining industry in Britain

in the early 1950's. The utilization of "natural" autonomous work groups, which originated with this theory, has been gaining popularity in industry (Hellriegel & Slocum, 1986). Members of a workgroup participate in decision making about the tasks, see the whole task rather than only a portion of it and alter environmental factors so they are congruent with the task. Linkages between the unit and its environment, such as relations with other departments, are considered when any form of redesign of the unit is undertaken (Rousseau, 1977).

The problem with the Sociotechnical approach was its lack of specificity when implementation was attempted. Hackman and Oldham (1980) felt they incorporated the positive aspects of the Sociotechnical approach with an objective way of measuring task attributes.

Another approach to work was developed by the Japanese. "Quality Circles" are a type of autonomous work group which meets on a regular basis to solve and monitor job related quality and/or production problems, improve working conditions and encourage self-development of employees. Members receive training in problem solving, statistical quality control and group process before joining a functioning "circle".

The Job Characteristics theory incorporated the strengths of classical organizational theory, human relations theory, behavioral sciences theory and the systems approach to work

design. The Job Characteristics Model is a behavioral approach, first developed in 1971 by Hackman and Lawler, expanding earlier work done by Turner and Lawrence (1965) and Hulin and Blood (1968). The Job Characteristics Model leans on the following principles of expectancy theory for some of its propositions:

1. Individuals engage in a behaviour to the extent that they believe they can attain an outcome which they value.
2. Individuals value outcomes they believe satisfy their physiological or psychological needs.
3. Individuals will work hard when conditions at work are such that they can satisfy their own needs best by working towards organizational goals.
4. Higher order needs (needs for personal growth, development, accomplishment) serve as powerful and consistent motivators.
5. Individuals with higher order needs experience satisfaction when they achieve something they value as a result of their own efforts. (Hackman & Lawler, 1971, pp.262-263)

The model Hackman and Lawler developed based on these expectancy theory principles is outlined in Figure 1. Testing of the Job Characteristics Model by Hackman and Lawler supported the premise that when jobs were high on all four core dimensions, workers performed high quality work, experienced high intrinsic motivation, enjoyed increased performance and effectiveness ratings from supervisors, and were satisfied and involved with

their job. The prediction of decreasing absenteeism and turnover when jobs were high on the core characteristics was upheld by Hackman and Lawler's research but the results were not statistically significant.

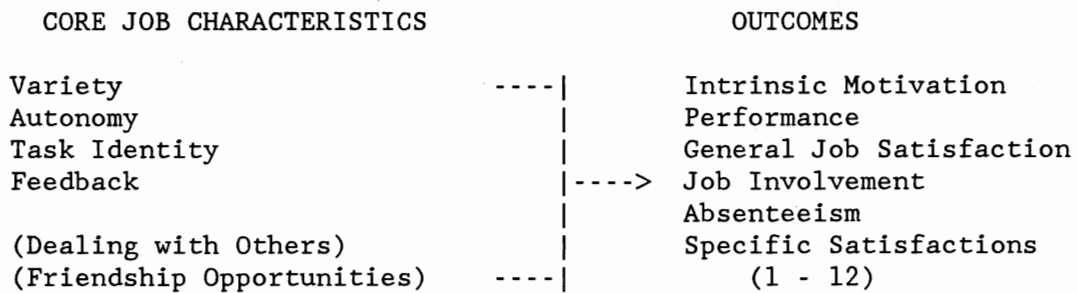


Figure 1: The Job Characteristics Model of Hackman & Lawler
(1971)

The Hackman and Lawler model was supported by Brief and Aldag (1975) with significant, positive correlations between job dimensions and employee reactions. Lawler, Hackman and Kaufman (1973) were unable to support the model in a field study of job redesign but attributed this result to the fact that only two of the four core dimensions were changed in the situation they studied and therefore the model was not adequately applied as change needed to occur on all four dimensions.

In 1975, Hackman and Oldham revised the original Job Characteristics Model to include another core characteristic and intervening variables they considered critical to the theory. The Job Diagnostic Survey was designed as the instrument for data collection.

The Job Characteristics Model

The Job Characteristics theory of Hackman and Oldham focuses on measuring the objective characteristics of a task thus building in task characteristics which lead to high internal work motivation, job satisfaction and high quality performance. The theory acknowledges that individual employees may respond differently to the same job (individual-job interaction). The model was formulated to "diagnose the motivational properties of jobs prior to redesign" (Hackman & Oldham, 1975, p.159). Because it has the ability to measure job characteristics, the theory provides a concrete set of criteria for use in deciding whether change is needed and if so what kinds of change are required. The theory deals only with aspects of the job that can be altered to create positive motivation for jobholders. Another strong point in this theory is that it acknowledges and measures the workers' needs for growth and development in their work and then considers these needs in the design of their work.

The theory assumes five job characteristics which, if present, allow workers "...to experience a positive self-generated

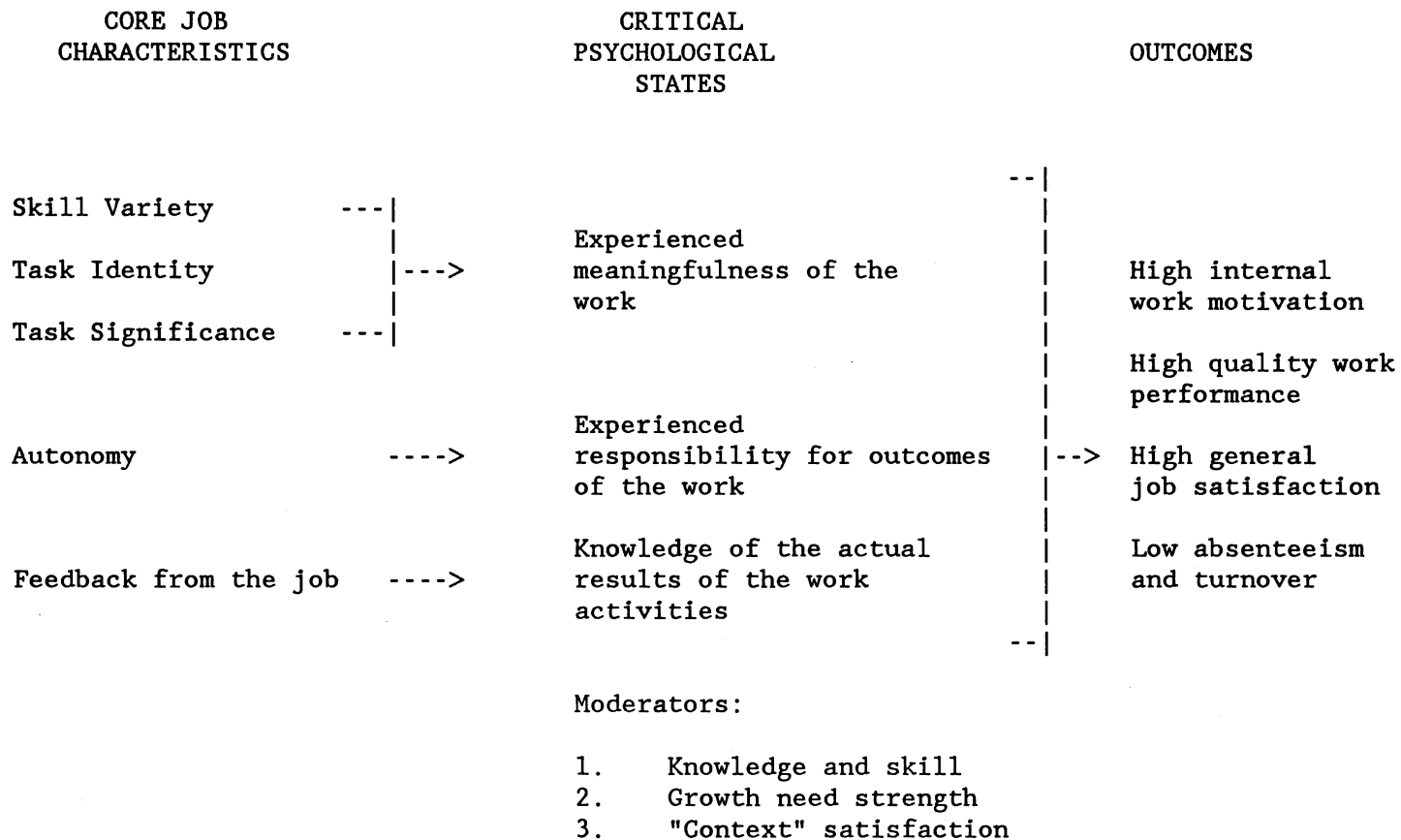


Figure 2: The complete job characteristics model.

(Hackman and Oldham, 1976, p.256)

affective 'kick' when they perform well and that this internal reinforcement would serve as an incentive for continued good performance" (Hackman & Oldham, 1980 p.60). Hackman and Oldham have not addressed interaction between groups of employees nor the social, technical or situational factors that are acknowledged by other theorists to affect the work environment.

Three critical psychological factors must exist in order to achieve positive personal and work outcomes defined by the model. These form the centre of the model. Employees need to have knowledge of the results of their work so as to feel good or unhappy about the results. They must feel responsible for these results believing that they personally are accountable for work outcomes. They do not perceive the quality of their work as dependent on factors external to their performance. Employees must experience the work as meaningful - it must be important in their value system and not trivial. This condition is necessary even if the other two variables are not strong. A meaningful task provides the chance to use and test personal skills and abilities.

Experienced Meaningfulness of the Work.

The degree to which the individual experiences the job as one which is generally meaningful, valuable, and worthwhile;

Experienced Responsibility for Work Outcomes.

The degree to which the individual feels personally accountable and responsible for the results of the work he does;

Knowledge of Actual Results of Work.

The degree to which the individual knows and

understands, on a continuous basis, how effectively he or she is performing the job. (Hackman & Oldham, 1976, pp.256-257)

It is necessary for all three factors to be present for strong internal motivation (the most significant outcome in the model) to develop and persist (Hackman & Oldham, 1976, 1980). This premise has been supported in the 1976 study using multiple regression analysis. The psychological states are, by definition, internal to persons and not directly manipulatable in designing or managing work (Hackman & Oldham, 1980, p.77).

Hackman and Oldham defined five job characteristics which lead to the desired psychological states. It is the presence or absence of these characteristics which determines whether the job motivates the workers to their peak performance and to experience feelings of satisfaction.

Skill Variety. The degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents of the person.

Task Identity. The degree to which the job requires completion of a "whole" and identifiable piece of work; that is, doing a job from beginning to end with a visible outcome.

Task Significance. The degree to which the job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment.

Autonomy. The degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in

determining the procedures to be used in carrying it out.

Feedback. The degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his or her performance. (Hackman & Oldham, 1980, pp.77-80)

It is through manipulation of these core job characteristics that the design of a job can be changed so that the people doing the work find it meaningful and rewarding.

"Skill variety " is the property of jobs which challenges or stretches the skills and abilities of employees to provide more meaningful work. Activation Theory postulates that people crave a variety of experiences which allow them to use different skills and levels of activity. Pinder (1984) supported the concept of skill variety as being a positive characteristic of a job. He said that the use of numerous skills by workers can result in the stimulation of a greater number of the employees' senses and may result in an increase in the overall levels of activation and arousal. This idea is not present in Herzberg's theory of motivation as he did not address activity levels except as work conditions which are considered as extrinsic hygienic factors.

Pinder (1984) pointed out that Activation Theory supports the idea that a job with task identity should be more stimulating. The "intactness" of the job provides the identity.

"Task significance" is the characteristic which transmits to workers the impact and effect of their work upon others and permits them to value this. To be significant, a task should affect the physiological and psychological well-being of other people.

"Skill variety", "task identity", and "task significance" are the task characteristics which in the model relate summatively to the psychological state "experienced meaningfulness of the work".

Hackman and Oldham stressed that workers must feel the results of the job depend upon their efforts, initiatives and decisions rather than on carrying out instructions from a supervisor or manual. Pinder (1984) acknowledged that autonomy is recognized as an important facet of motivation and job satisfaction. Autonomy is predicted to relate to the psychological state "experienced responsibility for outcomes of the work".

Employees need feedback concerning their performance and its effectiveness. It should be obtained directly from work-related activities, be simple and impersonal. Pinder (1984) stressed that the more immediate the feedback the less susceptible it is to dilution by other influences in the environment. Feedback from a supervisor is also essential to workers so they may assess their

performance. "Feedback" from the job is predicted to relate to the psychological state "knowledge of the actual results of work".

Probably the greatest amount of discussion generated about the core job characteristics centres on the intercorrelation of the characteristics and the resulting number of variables.

Hackman and Lawler (1971) found moderate intercorrelation among the four variables they used but felt that did not detract from their usefulness as independent variables. This was supported with multiple regression analysis. Hackman and Oldham (1975) found moderate intercorrelation among the five variables on their model. The measuring instrument, the Job Diagnostic Survey, had satisfactory psychometric characteristics and they supported the use of five separate, distinct variables. Other researchers have also supported the presence of five core job dimensions (Abdel-Halim, 1979; Dean & Brass, 1985; Orpen, 1979; Tyagi, 1985; Umstot, Bell, & Mitchell, 1976).

Dunham (1976) questioned whether five task characteristics could be defined or whether there were fewer. He found that "skill variety" and "autonomy" had relatively high interscale correlations and then expressed these as a single factor. He projected upon the interscale correlations to propose unidimensionality of job characteristics which has not been supported or used by any other researcher since. Dunham spoke out strongly (Pierce & Dunham, 1976) against other researchers who

maintained use of the five characteristics. Later Dunham, Aldag and Brief (1977) demonstrated two, three, four and five factor solutions for various samples they studied. The definition of four factors has been supported by other researchers (Champoux, 1978, 1980; Griffin, 1981). The most obvious conclusion here is the one put forth by Dunham, Aldag and Brief (1977) that the number of factors (job characteristics) may vary with the sample and that researchers should examine the dimensionality tapped by their own sample.

When all five job characteristics are combined, a score, the "motivating potential score" or MPS, can be obtained which indicates the overall potential of a job to foster the critical psychological states and personal and work outcomes for the employee.

$$\begin{array}{rcll}
 \text{Motivating} & & \text{Skill} & \text{Task} \\
 \text{Potential} & = & & \\
 \text{Score (MPS)} & & \text{variety} & \text{Identity} \\
 & & \text{-----} & \\
 & & & 3
 \end{array}
 \quad
 \begin{array}{l}
 \text{Task} \\
 + \\
 \text{Task} \\
 + \\
 \text{X Autonomy X Feedback}
 \end{array}$$

Figure 3: MPS Formula

A low score on autonomy or feedback will reduce the MPS substantially. A low score on one of the three characteristics that contribute to "experienced meaningfulness of the work" is not as serious and can be compensated by the other two characteristics. The "motivating potential score" is meant to be an objective measure of job characteristics from which the personal and work outcomes for workers can be predicted. If the MPS is high and if workers perform well then they are likely to experience the cycle which reinforces satisfaction and internal motivation. A high "motivating potential score" does not guarantee that employees will experience all the personal and work outcomes as the behaviour and needs of the individual worker have to be taken into account. Employees must be willing to take advantage of the opportunities offered them.

Hackman and Oldham (1976) looked at both additive, multiplicative and regression combinations of the scores of the five job characteristics - five different methods - and found no significant differences in the results. They chose their method as being no better or worse than any other. This study will investigate the MPS calculation chosen by Hackman and Oldham as well as the additive score to see if any difference exists between the two methods.

Dunham (1976) differentiated among three of the methods and felt an additive model was superior although results he obtained using all three methods of calculating the MPS were similar. He used this argument as support for his proposition of unidimensionality of job characteristics. Evans, Kiggundu and House (1979) agreed with him. Dunham (1976) and later Salancik and Pfeffer (1977) criticized other researchers for following Hackman and Oldham's method but did not demonstrate that Hackman and Oldham's choice was inferior or superior to any other method for calculating the "motivating potential score". The regression model was used by Brief and Aldag (1975) as they felt it performed better. Schmidt (1973) pointed out that a correlation coefficient between a dependent variable and composite variables formed by multiplying two or more variables together is highly dependent upon scale transformations made upon the components of the composite. Based on this comment Evans, Kiggundu and House (1979) used an analysis of variance technique to test for presumed interaction between "feedback", "autonomy" and the sum of "skill variety", "task identity" and "task significance". This technique proved to them the MPS formulation was faulty but they had no alternative to offer. The multiplicative model was used by Abdel-Halim (1979) as he found it performed as well as any other model. Bhagat and Chassie (1980) used the combination formula (Hackman &

Oldham, 1976) as it appeared as valid as any of the other combinations.

Although Hackman and Oldham consider the job characteristics to be objective, other researchers point out they are really the employee's perception of the task characteristics. The matter of consistency of these perceptions over time becomes important if this idea is accepted. Pinder (1984) stated there is evidence that people's perception of the task characteristics remains stable over time but that there may be a change in their emotional reactions to them. Griffin (1981) demonstrated consistency in the perception by employees of task characteristics over a period of time (three months).

Many researchers in testing the model have ignored the intervening variables (the psychological states) and examined the relationship between the core job characteristics and the personal and work outcomes. Hackman and Oldham (1975, 1976, 1980) consider the critical psychological states as the central point of the model. Orpen (1979) acknowledged the presence of the psychological states as a result of the simultaneous presence of the five core job characteristics. Hackman and Oldham stated the psychological states are internal to workers and cannot be manipulated in designing or managing work. Perhaps those who ignore the psychological states assumed that if the five core job characteristics are present then the three psychological states

are also present. Hackman and Oldham (1976) found that relationships between the core characteristics and the personal and work outcomes were stronger when mediated by the critical psychological states. This discovery adds strength to the argument that the psychological states be included in the model.

Research done by Hackman and Oldham (1975, 1976) supported the relationships predicted by their model between the core job characteristics and the critical psychological states. Correlation and multiple regression analyses techniques were used. Other researchers supporting the predictions of the model include: Arnold and House (1980), Hackman and Oldham (1976), Kiggundu (1980, 1983), Tyagi (1985). Arnold and House (1980), and Kiggundu (1980) noted a strong correlation occurred between the task characteristics "skill variety", "task identity", "task significance" and "autonomy" and the psychological state of "knowledge of actual results of work activities" which was not predicted by the model. The psychological state "experienced responsibilities for outcomes of work" was also affected by all five core characteristics but not always significantly even for its predicted relationship (Arnold & House, 1980; Kiggundu, 1980). Arnold and House (1980) and Kiggundu (1980, 1983) also found a positive relationship between autonomy and "experienced meaningfulness of work" which was not predicted by the model. Only Arnold and House (1980) demonstrated an unpredicted

significant relationship between "feedback from the job" and "experienced responsibility for the outcomes of the work".

The supporting research demonstrated positive statistically significant relationships between the core job characteristics and the critical psychological states; however, the relationships did not appear to be as discriminating as the model states. This variation from the model may be tolerated as the model stipulates that the psychological states must ALL be present in order to achieve the desired outcomes and certainly their relationship to the core job characteristics has been adequately demonstrated through research findings.

A positive relationship between the "motivating potential score" and each of the three psychological states has been demonstrated (Bhagat & Chassie, 1980; Kiggundu, 1980).

One of the major strengths of the Job Characteristics Model is that it acknowledges individual differences in people. Not all people respond positively to enriched work (Hackman & Lawler, 1971; Hackman & Oldham, 1975, 1976, 1980). By defining three influencing or moderating variables, Hackman and Oldham accounted for individual differences in workers. People are different and therefore react to stimuli in a different manner. Some are stimulated by a job which ranks high in the core job characteristics while others do not experience any such excitement. Pinder (1984) attested that job enrichment is not for

everyone. Some workers prefer increases in pay, job security and working conditions or social interaction to job redesign. These individual desires may change at different points during the careers of workers and are affected by the life tasks they are facing at any one time. The moderating variables of the Job Characteristics Model interact with the model at two points: between the core job characteristics and the psychological states and between the psychological states and the personal and work outcomes.

Workers must have sufficient knowledge and skill to perform the job well before the job characteristics take on any meaning. People new to a job may find it overwhelming as they struggle to become familiar with the skills, processes and lines of communication. The presence or absence of the five job characteristics has no meaning for these people. They are too busy trying to survive. What is observable is their frustration with the expectations they perceive have been placed upon them and their low self-esteem with regards to their abilities to perform the work. The same phenomenon may be observed when there is a change of some magnitude for workers within a job. This underlines the fact that knowledge and skill at performing job tasks are essential before any kind of task evaluation or enrichment is possible. The impact of job longevity on the

relationships hypothesized by the model was tested by Katz & Kahn (1978).

The second and most important influencing factor identified by Hackman and Oldham is the individual's growth need strength. The MPS is an objective measure of the opportunities for self-direction, learning and personal accomplishment which may exist in a job. The measure "growth need strength" indicates the willingness of employees to take advantage of these opportunities. Hackman and Oldham (1980) felt the psychological growth needs of people are critical in determining how vigorously individuals will respond to a job high in motivating potential. Some people have strong needs for personal accomplishment, learning and developing themselves beyond where they are now, but others do not. Pinder (1984) supported the premise that "growth need strength" has more effect on job enrichment than does general sociological or psychological background. However, he acknowledged how difficult it is to predict who will or will not benefit from job enrichment. Hackman and Oldham (1975) stated that those who strongly value and desire personal feelings of accomplishment and growth should respond very positively to a job which is high on the core dimensions. Those whose need for growth is not as strong may not recognize the existence of such opportunities, may not value them, may find them threatening, or resist pressure to grow and expand.

"Growth need strength" probably has been the moderating variable that has been examined most often by other researchers. The Job Characteristics theory states that the predicted relationship between task characteristics and employee reactions to work depends on the "need" state of the employee. The model proposes that when a job is high on the core dimensions (or the MPS is high), workers with a strong need for growth are highly motivated and well satisfied with the job. This was confirmed (Hackman & Lawler, 1971) with respect to the outcomes of internal motivation, general job satisfaction and job performance. Hackman and Lawler's original model did not contain the critical psychological states.

When the psychological states were introduced in 1976 by Hackman and Oldham, it was predicted that relations between the psychological states and outcome variables were stronger for individuals with high "growth need strength" than those with low "growth need strength". The prediction was upheld, supported by significant correlation for all personal and work outcomes but "decreased absenteeism and turnover" (Hackman & Oldham, 1976). The same prediction, that workers with high "growth need strength" would experience the psychological states to a greater degree than those with low "growth need strength", was made concerning the relationship of the core job characteristics and the critical psychological states. Hackman and Oldham (1976) found

correlations in the expected direction but the differences for the two groups, those with high and low "growth need strength", were less substantial and not significant. Hackman and Oldham went on to note, "The present findings provide no reason to expect the ultimate impact of working on enriched jobs will be more negative than positive for any group of employees, regardless of growth need strength" (p.275).

Several researchers have tested the moderating effect of "growth need strength" in the model. Many have ignored the critical psychological states and tested the effect of "growth need strength" on the relationship between core job characteristics and the outcomes. The results vary from strongly supportive (Abdel-Halim, 1979; Arnold & House, 1980 [MPS-psychological state relationship]; Bhagat & Chassie, 1980 [found growth need strength moderated the MPS-critical psychological state relationship also]; Champoux, 1980; Hackman, Pearce & Wolfe, 1978; Oldham, Hackman, & Pearce, 1976; Orpen, 1979; Salancik & Pfeffer, 1978; Wanous, 1974) to moderately supportive (Brief & Aldag, 1975; Evans, Kiggundu & House, 1979; Tyagi, 1985) to non supportive (Arnold & House, 1980 [psychological states-outcomes relationship]; Tyagi, 1985 [core characteristics-psychological states relationship]). Two methods of testing the effect of "growth need strength" were employed. Researchers divided the "growth need strength" scores of subjects into three groups and

compared the correlations of the top and bottom group or alternatively the moderating effect was tested by multiple regression analysis. Roberts and Glick (1981) criticized the first method of analysis but felt multiple regression analysis was appropriate. Hierarchical regression analyses as a test for moderating effects were also strongly recommended by Arnold & House (1980) depending on the nature of the hypothesized moderating effect.

Although Hackman and Oldham have stated that working conditions are not a major motivating factor in a job, and Herzberg's theory states they can only act as detractors from job satisfaction, the context of the work situation is a moderating variable in the Job Characteristics Model. "Satisfaction with context" refers to satisfaction with job security, satisfaction with co-workers and supervisors, and satisfaction with salary. If these conditions are acceptable to workers then they can focus more upon their needs for growth and respond positively to the core job characteristics. If the environmental context is not satisfactory and workers' "growth need strength" is high, they will probably carry on enthusiastically anyway. If they have lower "growth need strength", then they may seek a change in job.

"Satisfaction with context" as a moderating variable in the Job Characteristics Model has not been tested frequently by other researchers duplicating the model. Oldham, Hackman, and Pearce

(1976) found "satisfaction with context" did moderate the relationship between the MPS and personal and work outcomes. Hackman, Pearce and Wolfe (1978) found no significant moderating effect was made by "satisfaction with context" factors on the relationships between the MPS and the outcomes of "satisfaction" and "performance effectiveness". "Satisfaction with context" actually seemed to contribute to a rise in absenteeism and turnover in their study. Orpen (1979) found some support for the moderating effect of "satisfaction with context" factors but this was not significant for "job performance". Abdel-Halim (1979) supported the moderating effect of "satisfaction with co-workers" on the "MPS-general job satisfaction" relationship.

The focus of the Job Characteristics Model is the personal and work outcomes which result when a job contains the five core characteristics. Personal and work outcomes include "high internal work motivation" and "high general job satisfaction". In the model written in 1976 the other two outcomes are "high quality work performance" and "low absenteeism and turnover". In 1980 the other two outcomes are listed as "high work effectiveness" and "high growth satisfaction". "Work effectiveness" takes the place of "work quality" and the outcome "decreased absenteeism and turnover" has been dropped from the model because of a lack of support (Hackman & Oldham, 1980). "Growth satisfaction" was tested by Hackman and Oldham in 1976 and by other researchers

since but did not appear in the model as an outcome until 1980. Hackman and Oldham did not acknowledge that this was a change in their model although they do discuss why "decreased absenteeism and turnover" was not included as an outcome. "Decreased absenteeism and turnover" was expected when the core characteristics led to "increased satisfaction" and "high internal motivation" but this has not been borne out by research (Evans, Kiggundu, & House, 1979; Frank & Hackman, 1975; Hackman, Pearce & Wolfe, 1978; Kiggundu, 1980; Orpen, 1979). Hackman and Oldham stated that absenteeism may in fact increase when jobs are enriched for employees who are not competent in their jobs (Hackman & Oldham, 1980, p.93). No corresponding change was made to the Job Diagnostic Survey.

"Work effectiveness" includes quality and quantity of goods or services produced. The theory is that people experience positive feelings when they perform well which means producing high quality work of which they can be proud. Increased quantity is not always a characteristic of productivity as it may be associated with cutting corners but again Hackman and Oldham have predicted that inefficiencies of time and personnel can be removed when the job is enriched resulting in a more efficient system which may lead to increased quantity of production.

Internal work motivation is the most significant outcome as it perpetuates the work cycle. This outcome is especially

important to the Job Characteristics theory because it provides the linkage between effective performance and self-administered affective rewards. Employees are self-motivated to perform effectively on the job, feel positively when they are working effectively and negatively when they are doing poorly. "Good performance is an occasion for self-reward, which serves as an incentive for continuing to do well. The result is a self-perpetuating cycle of positive work motivation powered by self-generated (or intrinsic) rewards for good work" (Hackman & Oldham, 1980, p.72). The outcome, "high internal motivation" as the result of a high "motivating potential score", is well supported in the literature (Arnold & House, 1980; Bhagat & Chassie, 1980; Evans, Kiggundu, & House, 1979; Frank & Hackman, 1975; Hackman & Lawler, 1971; Hackman & Oldham, 1976; Hackman, Pearce, & Wolfe, 1978; Kiggundu, 1980; Knoop, 1981; Orpen, 1979; Terborg & Davis, 1982).

"General job satisfaction" is an overall measure of the degree to which employees are satisfied and happy with the job. "Growth satisfaction" indicates job holders have enriched opportunities for personal learning and growth at work and find these personally satisfying (Hackman & Oldham, 1975).

"High job satisfaction" has been well supported as an outcome although most researchers did not differentiate between "general satisfaction" and "growth satisfaction" (Arnold & House,

1980; Bhagat & Chassie, 1980; Brief & Aldag, 1975; Evans, Kiggundu, & House, 1979; Frank & Hackman, 1975; Griffin, 1983; Hackman & Lawler, 1971; Hackman & Oldham, 1976; Hackman, Pearce, & Wolfe, 1978; Kiggundu, 1980; Knoop, 1981; Orpen, 1979; Steers, 1976; Steers & Spencer, 1977; Stone, 1976; Terborg & Davis, 1982; Umstot, Bell, & Mitchell, 1976). Several researchers have used the Job Diagnostic Survey satisfaction scales but others used instruments designed by other researchers:

1. Orpen (1979) - Job Descriptive Index,
2. Kiggundu (1980) - instrument designed by Lawler and Hall, and
3. Griffin (1983) - Minnesota Satisfaction Questionnaire)

Those researchers who identified "growth satisfaction" as a specific outcome were also able to support it as predicted by the model (Arnold & House, 1980; Bhagat & Chassie, 1980; Hackman & Oldham, 1976; Kiggundu, 1980).

"Work performance/effectiveness" has been one of the most disputed outcomes of the model and the one with the weakest support particularly when the outcome was labelled "performance". Researchers demonstrating a lack of support for this variable as an outcome of a high motivating potential score include: Griffin (1981), Hackman, Pearce and Wolfe (1979), Orpen (1979), Terborg and Davis (1982). Griffin, Welsh and Moorhead (1981) reviewed empirical studies over the previous ten years and found support

for "increased performance" as an outcome in three studies, mixed support in one study and no support in three studies. Griffin (1983) did find that objective task changes influenced productivity.

"Work effectiveness/performance" is expected to increase when the motivating potential of a job is high. "Work effectiveness" refers to the quality and quantity of goods or services produced. Increased quality is viewed as increased performance (Hackman & Lawler, 1971) but increased quantity may not be a desirable goal if quality suffers. Increased quantity of production is to be valued in combination with quality performance. It may be achieved when quality rises (Katzell, Bienstock, & Faerstein, 1977; Umstot, Bell, & Mitchell, 1976). Hackman and Oldham postulate that work redesign may remove the demotivating effects of a traditional job such as routine and repetitive work which may lead to nonproductive or disruptive behaviour. Inefficiencies in the use of time and support staff may be eliminated through combining several small tasks into a meaningful whole task. The process of redesign may refine and simplify the overall work system. Hackman and Oldham caution that if these inefficiencies do not exist in the job design prior to redesign then the quantity of work done may decrease as the quality increases. Support for the increase of quantity and quality of work as an outcome of the core job characteristics has

been shown by: Arnold and House (1980), Evans, Kiggundu and House (1979), Frank and Hackman (1975), Griffin (1983), Hackman and Oldham (1976).

In the 1971 and 1976 models, it was predicted that an increased motivating potential score would decrease the amount of time an employee was absent from work and the amount of employee turnover in a position. This prediction was made as a result of evidence that simple, routine, non-challenging jobs often led to increased absenteeism (Hackman & Lawler, 1971). In their study absenteeism was lowest when jobs were rated as being high on all four dimensions but not significantly so. Mixed results have been obtained for this correlation in studies done between 1971 and 1980. Frank and Hackman (1975) found no significant positive correlation. Evans, Kiggundu, and House (1979), Hackman and Oldham (1976), Hackman, Pearce and Wolfe (1978), Kiggundu (1980) found negative correlations contrary to the predicted direction. Orpen (1979) did find a significant reduction in absenteeism when he examined a sample population before and after job enrichment occurred in a well controlled study. Staw and Oldham (1978) conclude that absenteeism may serve as a maintenance function for workers who otherwise could not cope as well with their jobs. Because the relationship between absenteeism and performance is more complex than it first appears, a simple correlation does not occur.

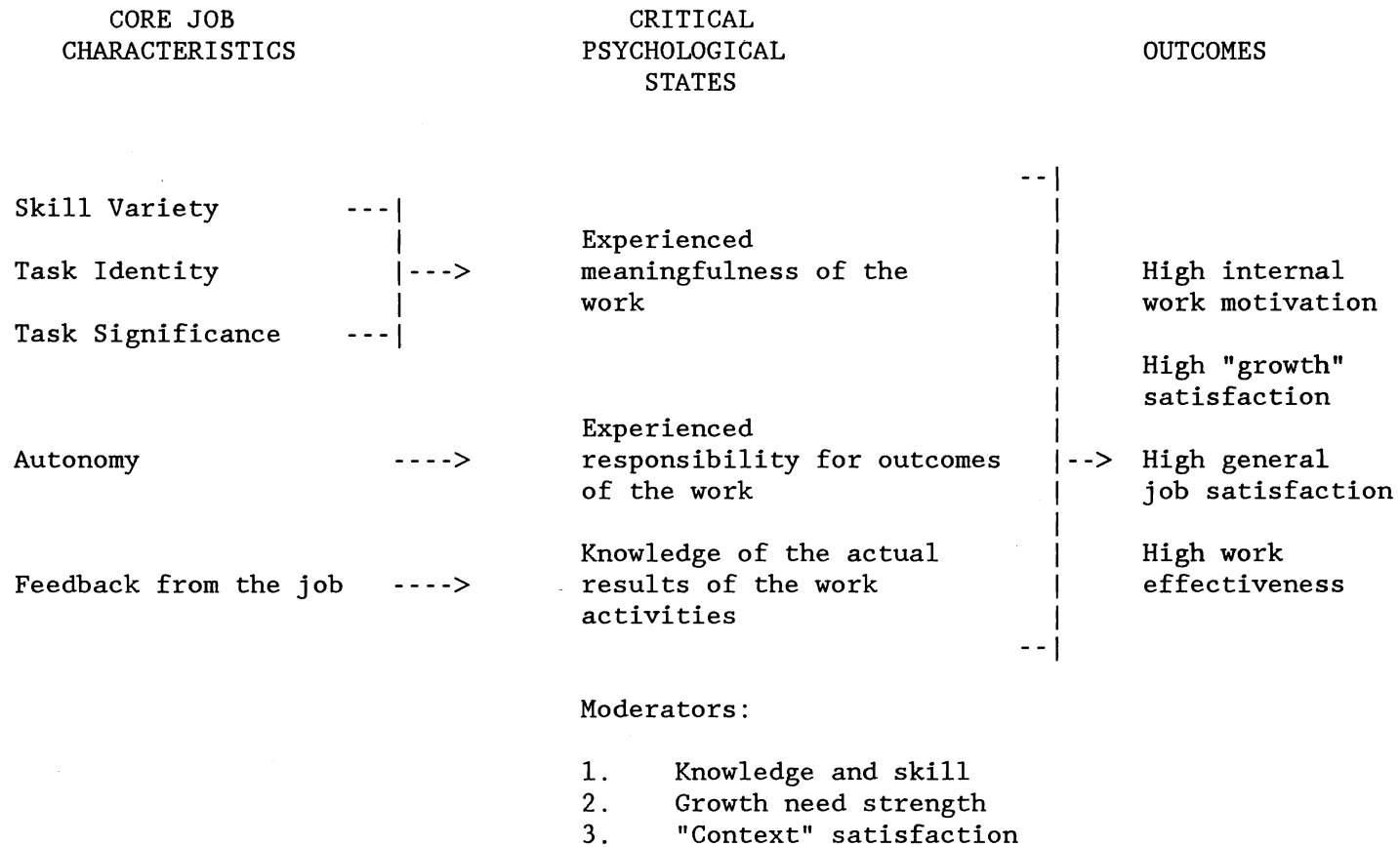


Figure 4: The complete job characteristics model.

(Hackman and Oldham, 1980, p. 90)

In 1980 Hackman and Oldham removed the variable "decreased absenteeism and turnover" from the model and separated the outcome "job satisfaction" into "high general satisfaction" and "high growth satisfaction" (see Figure 4). They acknowledged the variety of results obtained in respect to "decreased absenteeism and turnover" and acknowledged the research results were far from conclusive. They also stated their belief that the effect of job enrichment through task design may be positive for some workers but negative for others, therefore the overall correlation of task characteristics with the outcome "decreased absenteeism and turnover" may not improve with job redesign.

Hackman and Oldham (1976) found there were causal priorities among several outcome variables which were not described in the model. Some of these have been examined by various researchers. Staw and Oldham (1978) found some support for the premise that absenteeism was negatively related to performance for employees highly satisfied with opportunities for growth and development. When "internal work motivation" was measured by Staw and Oldham (1978) using the Job Diagnostic Survey, it was found to be an accurate predictor of an employee's performance. Another relationship between "job satisfaction" and "decreased absenteeism and turnover" was hypothesized by Cheloha and Farr (1980) after they obtained mixed results with their research on the relationship between "job satisfaction" and "decreased absenteeism

and turnover". They suggested that the relationship was inverse and mediated by "job involvement", a variable not included in this model.

The Job Characteristics Model predicts a relationship between the critical psychological states and the personal and work outcomes. This relationship has been supported by the few researchers who have tested it (Hackman & Oldham, 1975, 1976¹; Kiggundu, 1980, 1983; Tyagi, 1985). Arnold and House (1980) found a significant positive relationship between all the individual psychological states and outcomes² but not between the presence of the three psychological states simultaneously and personal and work outcomes. They question the three way interaction of the model and the psychological states as the "causal core".

No correlation was found between the three psychological states and the outcome of "low absenteeism and turnover" by Hackman and Oldham (1976) but when "increased growth satisfaction" was substituted instead of "decreased absenteeism and turnover", it was upheld as an outcome (Arnold & House, 1980; Hackman & Oldham, 1976).

Following the formulation of the Job Characteristics Model in 1976 and up to its revision in 1980, researchers tested the model as presented with varying results although the model was generally upheld. All applications were done in business and industry - none in education. There has been support for the

model but also a great deal of discussion about the model since 1980.

A number of cross-sectional correlational studies have supported the validity of the Job Characteristics Model showing that the five core job characteristics were positively correlated with the personal and work outcome variables of "satisfaction", "internal motivation" and to a lesser extent, "job performance" (Arnold & House, 1980; Brief & Aldag, 1975; Champoux, 1980; Evans, Kiggundu, & House, 1979; Knoop, 1981; Orpen, 1979; Rousseau, 1977; Sims & Szilagyi, 1976; Terborg & Davis, 1982; Tyagi, 1985; Umstot, Bell, & Mitchell, 1976; Wanous, 1974).

Knoop (1981) used a sample of primary and secondary school teachers as his sample marking the first investigation of this population. Tyagi (1985) applied the model to a population of salesmen. Terborg and Davis (1982) included various service personnel such as nurses in their sample. Joiner, Johnson, Chapman and Corkrean (1982) and Kirsch (1985) accepted the model and used it as a basis for suggested change in nursing service. Rousseau (1977) also used nursing service in her sample.

Some studies did not support the model.

Lawler, Hackman and Kaufman (1973) found that job enrichment with telephone operators occurred on only two of the four (Hackman & Lawler, 1971) core job dimensions while the theory postulated that changes must occur on all four dimensions.

Frank and Hackman (1975) studied a job enrichment programme within a bank. The jobs themselves actually changed very little on the core job dimensions. Several interfering variables were identified (e.g., lack of time for implementation, major amounts of "down time" with the computer) and the project was abandoned. Because the model was not followed, the desired outcomes did not occur.

Champoux (1978) described a project in a federal agency where jobs were redesigned. The subjects experienced an initial positive response to the job changes followed by a decline in enthusiasm when they became accustomed to the changes. Champoux pointed out that jobs within an organization are interdependent and that any attempt to change a job in one department must be considered as to its effect on an interdependent department. In this case, the enrichment project was discovered to have had negative consequences for another department while the effects had been positive for the department under study. When unrest arose because of the "de-enriched" jobs, the positive responses diminished.

Hackman and Oldham (1980; Oldham & Hackman, 1980) would respond that no change should take place within an organization unless a diagnosis has been done using the Job Diagnostic Survey and that the survey determines change is needed. The instrument has the ability to identify the areas requiring change and changes

should be directed to these areas, not made for the convenience of the organization.

Changes to the Job Characteristics Model

Many researchers have spent time speculating on the nature of the moderating variables and trying various moderators different to those specified in the model. None have met with lasting success or been adopted by other researchers. Variations include:

1. Brief and Aldag (1975); Turner and Lawrence (1965); Wanous (1974), - moderating effect of the location of work - city versus town or rural setting
2. Hulin and Blood (1968) - alienation from middle class norms as a moderator
3. Robey (1974) - intrinsic and extrinsic values as moderating variables
4. Stone (1976) - use of Protestant Work Ethic Scale
5. Dunham (1977) - moderating effect of the organization
6. Evans, Kiggundu and House (1979); Steers and Spencer (1977), - measure of the need for achievement as a moderating variable
7. Cherrington and England (1980) - desire for an enriched job as a moderator
8. Knoop (1981) - locus of control as a moderator

9. Kemp and Cook (1983) - job longevity and growth need strength as moderators
10. Griffeth (1985) - participation as a moderator
11. Levanoni and Knoop (1985) - task dimensions as moderators on the relationship between leaders' behaviour and employees' satisfaction with supervision as postulated by path-goal theory of leadership.

Champoux (1978, 1980) looked at a curvilinear relationship between job scope (MPS) and the critical psychological states while Kiggundu (1983) added a sixth core characteristic of "task interdependence" which was further divided into "initiated task interdependence" and "received task interdependence". He adjusted the critical psychological states by differentiating between "experienced responsibility for one's own work" and "experienced responsibility for other's work". He obtained mild support of this addition to the original model but these variables have not been adopted or tested by any other researcher.

Criticism of the Job Characteristics Model

The model was examined critically by different researchers from its inception. King (1974) conducted extensive experimental studies in organizational settings providing strong evidence that employees were responding to managerial expectations resulting from change. This finding cast doubt on the whole motivational

basis of the model particularly the causal relationship between job characteristics and outcomes. Bhagat and Chassie (1980) countered King's results with a longitudinal study using the Job Characteristics Model and obtained strong support for the causal relationships between the core characteristics and outcomes as defined by the model.

Rousseau (1977) acknowledged that Hackman and Oldham pulled together into a cohesive theory many of the ideas that had been circulating among organizational behaviorists. "In general, research on job design supports Hackman's theory that specific types of job characteristics are related to employee behavior and attitudes" (p.23). She felt that the Job Characteristics theory overlapped the Sociotechnical Systems theory and that the two should be combined as an optimum theoretical basis for change. Rousseau described her proposed combination. She found also that different job characteristics from the two models were salient in different types of technologies. This idea of combining the Job Characteristics theory with another theory which considered work environment was expressed later by Griffin (1983, 1985).

Pierce, Dunham and Blackburn (1979) examined "the main and interaction effects of social system (work unit) structure, job design, and employee growth need strength..." (p.238). They concluded that the social system structure must be included in any

job redesign project but that the design of the job was more important to the worker than that of the social system.

Roberts and Glick (1981) conducted an extensive literature review of research done using the Job Characteristics Model and concluded that the research had not moved beyond an exploratory stage. They described the statement of the theory as occasionally ambiguous and unclear, with important distinctions among the variables being frequently overlooked or weakly conceptualized. They felt research to that point had failed to actually test the relationships of the model, did not use multimethod measures, and confused within person, person-situation and situational relationships. Their review concluded that research using the model demonstrated:

1. changing characteristics of the job, other than those of the task, may be beneficial to organizations;
2. little information had been given on how to change tasks;
3. investigations had become narrow over time with researchers focusing on portions of the model rather than the whole model;
4. organization context had been ignored;
5. the Job Diagnostic Survey had many faults and did not accurately assess variables on the model; and
6. the model did not differentiate between objective and perceived task characteristics.

Two trends in work design were cited as appropriate strategies for the future of task design by Roberts and Glick (1981), that of combining the Job Characteristics Model with the Sociotechnical approach to task design and the move towards accepting the Social Information Processing approach as an alternative to work design.

"Quality of Working Life" principles were discussed by Martell (1981). He felt these principles - security, equity, autonomy and learning, democracy - were essential to work systems design. The design or redesign of a work system was accompanied by changes in organizational design. This approach is a form of Sociotechnical theory of work design. Griffin (1982) identified task design as a key part of most "quality of working life" programmes.

"Quality Circles" were another innovation around task design described by Head, Molleston, Sorenson Jr., and Gargano (1986). They attributed the development of "Quality Circles" to work done by Hackman, Herzberg, Maslow and Likert and state that job design principles have been incorporated. These researchers liken "Quality Circles" to a type of job enrichment but acknowledge this is a premature conclusion as empirical results are not available to support this statement. In their study they implemented "Quality Circles" as a form of job enrichment and measured the resulting motivation and satisfaction using the Job Diagnostic

Survey. No significant changes were demonstrated following the implementation of Quality Circles.

An extensive review of job design literature by Campion and Thayer (1982) revealed that no one view was without its problems. They suggested an interdisciplinary approach and proposed a job design taxonomy which reflected content of four job design approaches: motivational, mechanistic, biological and perceptual/motor. The Multimethod Job Design Questionnaire was designed to reflect these approaches and was found to be reliable and valid. They decided a multidisciplinary perspective was needed to integrate major theories of job design. Suggestions for practical application included:

1. diagnosis and evaluation of organizational problems to see if problems exist in job design;
2. diagnosis and evaluation in actual cases of job redesign;
and
3. a guide for job design in system development.

Although these may seem like variations on the original model, Hackman and Oldham have consistently stressed the need for diagnosis before altering the design of a job. The principles of implementation developed by Campion and Thayer are not new. The instrument has not been used or tested since its initial introduction.

The Social Information Processing Model

Salancik and Pfeffer (1977) examined the whole approach to work design and introduced the Social Information Processing model. They began by questioning the basic tenets of need-satisfaction models such as the Job Characteristics theory while acknowledging the popularity of these models because of their flexibility, although this characteristic makes empirical testing difficult. They felt that need-satisfaction models deny human adaptability in coping with changing circumstances and that the models did not consider the external environment or social context in which work occurs. Their 1977 paper listed the faults of the needs-satisfaction approach as:

1. it is impossible to refute;
2. the components of the needs-satisfaction model fail to capture the full spectrum of complexities of work design;
3. there are implications for management which are not clearly defined and may not be part of the work design;
4. the theoretical concept of human needs may be argued;
5. job characteristics rather than being objective may be defined by informational cues about the job received from others; and
6. methodological problems include a priming effect in the model (Job Characteristics Model) and the assessment

instrument and problems with consistency of methodology amongst researchers.

Salancik and Pfeffer concluded that the need-satisfaction model did not warrant unconditional acceptance.

The Social Information Processing model proceeded from the fundamental premise that individuals as adaptive organisms adopt attitudes, behaviours and beliefs in relation to their social context and to the reality of their own past and present. Therefore, most can be learned about individual behaviour by studying the informational and social environment within which that behaviour occurs and to which it adapts (Salancik & Pfeffer, 1978, p.226). The Social Information Processing model considered the factors affecting employees' perceptions of work, which included:

1. the cognitive processing of the job dimensions;
2. the social environment which provides cues as to which dimensions characterize the work environment;
3. social information concerning how the individual should weigh various dimensions of the work;
4. cues concerning how others weight the work environment; and
5. the idea that workers possess the ability to construct their own satisfaction by selectively perceiving and interpreting their social environment and their own past actions. A sense of commitment to the work developed from this

perception and was shaped by the workers' experience and background. (Salancik & Pfeffer 1978, p.249)

King (1974) may have been the first to draw attention to the effects of the Social Information Processing approach when he stated that establishing expectations through the use of the model in job redesign led to self-fulfilling outcomes. Oldham and Miller (1979) demonstrated that individual task perceptions were influenced by the perceptions of others in the workplace. O'Reilly, Parlette and Bloom (1980) showed that perceptual assessments of task characteristics varied with the individual's frame of reference and job attitudes.

Griffin (1983) has been a vocal supporter of either incorporating or turning completely to the Social Information Processing approach for a model of job design. In this paper he returned to the idea that informational cues from supervisors may have a significant effect on employee perceptions of task attributes and affective responses. He pointed out that the original model of Hackman and Lawler (1971) contained the task characteristics "dealing with others" and "friendship opportunities" but that these were subsequently dropped - in his opinion, a mistake. His 1983 study demonstrated that the perceptions of task attributes and affective responses were significantly influenced by objective task changes and informational cues from supervisors. He also found substantial

support for the idea that supervisory cues affected employee perceptions of these attributes.

Dean and Brass (1985), while examining the Social Information Processing model, found that task characteristics reported by employees (perceived) were similar to perceptions based on cues by an objective observer, thus lending support to Hackman and Oldham's belief their approach assessed task characteristics objectively.

Griffin (1987) noted that although the Social Information Processing approach has shown promise, it has not been widely accepted in organizational behaviour circles as a viable alternative. The terms, processes and the interrelationships between the terms and processes have not been defined appropriately. Much of the research done with the SIP approach related to attitudes but not to perceptions. Some of the criticisms by Salancik and Pfeffer of the Job Characteristics theory have been overstated. Griffin observed that any research studies which examine the SIP model did not refute the task attributes model nor did they offer specific support for the SIP approach - most offered more support for an overlapping framework (Griffin, Bateman, Wayne, & Head, 1984). He proposed and outlined such an approach in detail, including a complex conceptual model. Griffin described this model as an attempt to bring together the best of the existing models and theories while simultaneously

addressing many of the deficiencies of each - the same reason Hackman and Oldham had for developing the Job Characteristics Model in 1976. No research has been published with this integrated model. Griffin has suggested using Campion and Thayer's (1982) Multimethod Job Design Questionnaire as a survey instrument.

Problems with the Job Characteristics Model

It may appear that the Job Characteristics Model was designed to evaluate and modify specific jobs within a work unit without considering the interrelation of that unit with other units in an organization. Hackman and Oldham recognized this and although they addressed this fact in their recommendations for implementation, became pessimistic about the application of the model because job enrichment has often been incompatible with organization technology, control and personnel systems (Oldham & Hackman, 1980). They felt their model did consider work design in an organization context and acknowledged that changes in one part of the organization necessitated changes in organizational systems as well. Underestimating the difficulty in carrying out changes in the work itself or the degree to which changes in work design altered the surrounding organization systems has led to failure in implementation of the Job Characteristics Model. Redesigned jobs may be at risk of failure unless they are congruent with organizational systems and practices. The problem is not so much

with the theory but with the implementation of the theory as demonstrated by various attempts over the years which have been described in the literature. The model is a whole, it cannot succeed in part and many of these applications have been fragmentary. Hackman and Oldham defined the constraints on job redesign as the technological system, the personnel system and the control system but these systems may also represent the major reasons a change is required.

Three choices are available to an organization upon detection of a need for change in task design. Management can:

1. decide not to redesign the work;
2. proceed with changes despite the constraints noted above and recognize that the resulting change may be small and insignificant or throw the whole system into chaos by making the change anyway; or
3. redesign the organizational systems themselves either prior to or simultaneously with the work redesign project so the system can accommodate and support the employees' work on enriched jobs.

The model was never meant as a "quick fix" for problems within an organization. Throughout the literature such applications have been tried and failed. Hackman and Oldham addressed this problem several times (1976, 1980; Oldham & Hackman, 1980).

In spite of the failures and criticism the Job Characteristics Model remains the only intact, complete model with a measuring instrument, a sound theoretical basis and a completely described model. Because of these attributes, it was chosen as the model of job design to test in an educational setting.

Summary

The Job Characteristics Model was developed to incorporate the best parts of the behaviorist approach to work design. Approaches to work design to this point tended to focus on breaking a task down to its simplest form and promoting high productivity without regard for the psychological or sociological well-being of the worker. As a result productivity was not at desired levels. Hackman and Oldham developed an approach which focused on fitting the task to the individual worker and took into consideration the needs of the worker as well as the productivity goals of the organization.

A review of the literature revealed support for use of the Job Characteristics Model and that its study has been based primarily in technology and industry. Several researchers have supported the model but others have experienced problems with it. Hackman and Oldham felt many of these problems reflected inappropriate application of the model e.g., implementing job redesign before a need was demonstrated or diagnosed.

More recently, there has been a move to integrate the Job Characteristics Model with the Social Information Processing approach to work so as to highlight the worker-organization relationship. A model was developed but has not been tested nor has an appropriate measuring instrument been identified. Examining and expanding the moderating variables "context of work" and "knowledge and skill with work" in the Job Characteristics Model may compensate for this perceived deficit in the model.

This study is designed to test the predictions of the Job Characteristics Model in an educational setting. Because the Hackman and Oldham model is the most complete, theoretically based model and has a specific measuring device, it has been used as the theoretical framework for this study.

Hypotheses

The purpose of this study was to test the relationships of the Job Characteristics Model with a population of post-secondary educators.

After reviewing research replicating the model as well as criticism of the model, it was decided to test the relationships predicted by the model using the variables defined by Hackman and Oldham. Criticism of other research done with the model has highlighted the fact that very few researchers have tested the entire model (Roberts & Glick, 1981). The relationship between the core job characteristics and the personal and work outcomes

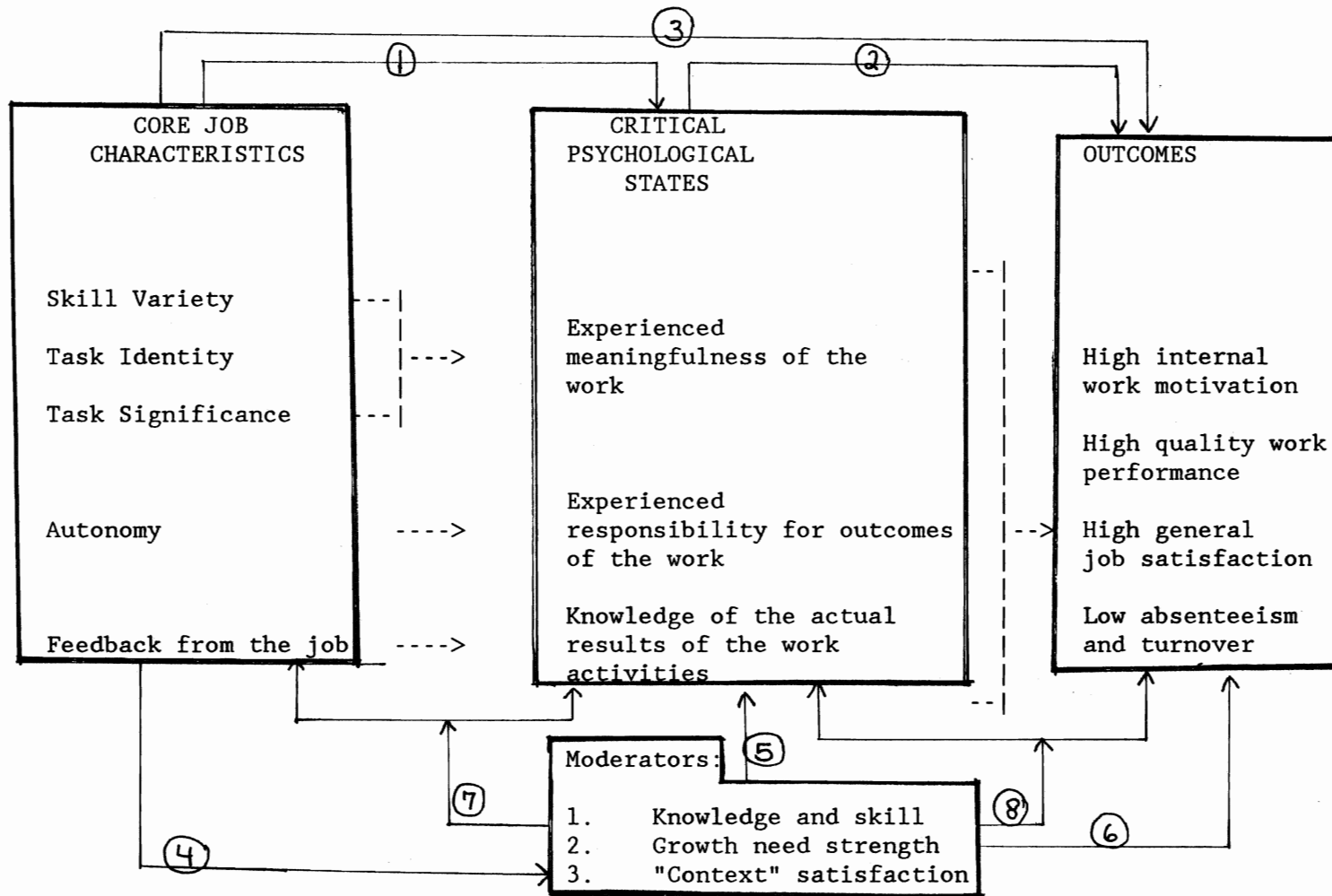


Figure 5: Model of Hypotheses Testing

will be tested with and without the mediation of the critical psychological states to investigate any difference in the relationships. The moderating variables will be tested for their moderating effect on the model at the two points established by Hackman and Oldham as well as for any direct effect they may have on the psychological states and personal and work outcomes.

The relationships which will be tested by this study are outlined in Figure 5.

The following hypotheses were generated to test the model:

1. The critical psychological states will be influenced by the core job characteristics, that is, experienced meaningfulness of the work, experienced responsibility for the work, and knowledge of the actual outcomes of the work will be predicted by skill variety, task identity, task significance, autonomy, and feedback.
2. Personal and work outcomes will be influenced by the three critical psychological states, that is, internal work motivation, general job satisfaction, performance, and absenteeism will be predicted by experienced meaningfulness of the work, experienced responsibility for the work, and knowledge of the actual outcomes of the work.
3. Personal and work outcomes will be influenced by the five core job characteristics, that is, internal work motivation, general job satisfaction, performance, and absenteeism will

be predicted by skill variety, task identity, task significance, autonomy, and feedback.

4. The individual differences of employees will be influenced by the five core job characteristics, that is experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, and satisfaction with supervision) will be predicted by skill variety, task identity, task significance, autonomy, and feedback.
5. The critical psychological states will be influenced by individual differences of employees, that is, experienced meaningfulness of the work, experienced responsibility for the work, and knowledge of the actual outcomes of the work will be predicted by experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision).
6. The personal and work outcomes will be influenced by individual differences of employees, that is, internal work motivation, general job satisfaction, performance, and absenteeism will be predicted by experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision).

7. The relationship between the core job characteristics and the critical psychological states will be moderated by the individual differences of employees, that is, experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision) are predicted to have a positive moderating effect on the relationship between the core job characteristics and the critical psychological states.
8. The relationship between the critical psychological states and the personal and work outcomes will be moderated by individual differences of employees, that is, experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision) are predicted to have a positive moderating effect on the relationship between the critical psychological states and the personal and work outcomes.

Footnotes

1. This relationship was found to be stronger than the relationship between task characteristics and outcomes.

2. Multiple regression analysis was used as an analytical technique.

CHAPTER THREE

Research Procedures

Sample

A quantitative correlational survey was administered to all Academic faculty (n = 550) at a community college in Ontario. Of the five hundred fifty questionnaires distributed, two hundred forty-eight were returned and of these one hundred seventy-two were used. The demographic data of the subjects are presented in tabular form in Table 1.

Procedure

Initially the proposal for this research was presented to the Associate Dean, Department of Nursing and her permission was sought to survey the Department of Nursing at this community college. After these initial data were collected it was decided to increase the number of subjects to include the entire Academic faculty of the college, Teaching Masters, Chairmen, and Deans. The research proposal was submitted to the Associate Dean of Nursing, the Dean of Community Studies and Health Care, the Academic Vice-President, and the President. Their permission and support for the research were obtained. Memos pertaining to this permission are found in Appendix A.

TABLE 1

DESCRIPTIVE DATA OF SAMPLE

N (Sample)	172	%
<u>Position</u>		
Teaching Masters	160	93.0
Chairpersons	9	5.3
Deans	3	1.7
<u>Age</u>		
< 30	7	4.1
31 - 40	60	34.9
41 - 50	67	39.0
51 - 60	30	17.4
> 60	7	4.1
Did not state	1	.6
<u>Gender</u>		
Male	77	44.8
Female	91	52.8
Did not state	4	2.3
<u>Education</u>		
No degree	31	18.0
Bachelor	77	44.8
Master	60	34.9
Did not state	4	2.3
<u>Years of Experience</u>		
0 - 2	55	32.0
3 - 5	27	15.7
6 - 10	27	15.7
> 10	60	34.9
Did not state	3	1.7

To gain support for the research and inform the various constituents at the college of the nature and purpose of the research, the researcher met with a number of groups: the Chairmen's Planning Group, the executive of the faculty union, the Vice-President-Academic and Deans' Committee, and the Chairmen's Group. In each instance the proposal was explained, the support of the group sought and received. An article (co-authored by a colleague and in Appendix A) was placed in the union newsletter which went to all faculty, again explaining the purpose of the study.

An issue raised repeatedly at these sessions concerned the confidentiality of the respondents. To ensure confidentiality, the questionnaires were mailed to respondents in an envelope with a return envelope inside. The questionnaire was returned to the mailroom by the respondent in the sealed envelope and transported, unopened, to the data entry clerk by courier or messenger. Data were received by the researcher, collated on a computer printout.

The questionnaires were distributed by mail with college mailing labels obtained from the Human Resources Division. A memo (see Appendix A) gave instructions for completing and returning the questionnaire. Respondents were asked to complete the questionnaire within a two-week period. Two reminder notices were sent out at two-week intervals. Questionnaires continued to arrive over a six-week period and were submitted to the data bank.

Design

This study was conducted in the community college as conditions existed at the time. The design was a quantitative correlational survey.

Instrument

Data were gathered through the use of a questionnaire. The set of questionnaire items was a subtest of a larger survey that measured numerous aspects of organizational behaviour along with the variables discussed here.

The core job characteristics, critical psychological states, the outcome variable "internal work motivation", and the moderating variable "growth need strength" were measured using the Job Diagnostic Survey created by Hackman and Oldham (1975). This instrument was created for use in diagnosing, designing or redesigning jobs within an organization. The ratings of the core job characteristics were to be obtained from at least two sources - the job incumbent and his supervisor. Many researchers have not followed this procedure, instead using the job incumbent's ratings alone. For practical reasons, only the job incumbent's rating was sought in this study.

Kiggundu (1980) compared job ratings given by the incumbents, their supervisors and co-workers and found these to be similar. He concluded that with the reliability and validity of the Job Diagnostic Survey subscales found in his study and the

previously documented evidence of the instrument's psychometric properties, the job incumbents' ratings could be generalized to the other raters. Kiggundu also stated the instrument could be adopted for use in obtaining multiple ratings of job characteristics in a variety of situations and organizational settings. This work supports the reliability of the JDS items and the use of the incumbents' ratings only as was done in this study.

The Job Diagnostic Survey has been criticized by King (1974), Salancik and Pfeffer (1977), Terborg and Davis (1982) who felt the order of questions in the questionnaire caused a priming effect which may contaminate the correlations between job characteristics and personal and work outcomes. Arnold and House (1980) reordered the questions of the Job Diagnostic Survey to avoid this priming effect and still achieved significant results. In this survey the questionnaire items have been reordered and blended with several other items which should have significantly reduced any priming effect found on the original instrument.

Dunham (1976) and later Champoux (1980) did not like the Job Diagnostic Survey because of the problems they perceived with the dimensionality of the job characteristics. Pokorney, Gilmore and Beehr (1980) looked at the Job Diagnostic Survey and found five-factor solutions that were consistent with Hackman and Oldham's a priori dimensions. The five-factor solution has been assumed here.

Griffin (1981) used the Job Descriptive Index for his work but did say it compared favourably to the job satisfaction measures of the Job Diagnostic Survey.

Roberts and Glick (1981) disliked the use of a single questionnaire where many of the items had similar wording, to measure different variables. They felt this characteristic of the instrument led to increased correlations between the variables. Their summary of the problems with the Job Diagnostic Survey included:

1. The appropriateness and comprehensiveness of the four or five perceptual task dimensions has gone unquestioned.
2. There is no overall agreement about whether an overall job complexity score is desirable and, if so, what combinatorial strategy to use...
3. Common method variance has undoubtedly inflated observed relations among perceptions of task dimensions, MPS, GNS, and satisfaction...(p.210)

Roberts and Glick suggested strongly that the heavy reliance on questionnaires to gather data should be reduced and that the items be restructured so as not to be so similar. No other researcher has taken up this challenge.

The outcome "performance" in this study, was assessed by a single item described by Porter and Lawler (1968).

"Job satisfaction" was measured with Hatfield's (1985) Job Perception Scales. This 21-item measure assesses satisfaction

with five job facets: work, pay, promotion, supervision and co-workers. The items were rated on a seven-point Likert scale. This measure is modelled after the Job Descriptive Index Scale (Smith, Kendall & Halim, 1969) which is probably the most frequently used measure of job satisfaction. The Hatfield Scale is shorter but equally valid and reliable. The reliability coefficients of the variables used appear in Table 2 and can be seen to indicate satisfactory reliability. The Cronbach alpha reliability co-efficients for the variables used are:

- satisfaction with work	0.81
- overall job satisfaction	0.68
- satisfaction with pay	0.90
- satisfaction with co-workers	0.83
- satisfaction with supervision	0.82

For this study, both the job satisfaction facet and overall job satisfaction (calculated by summarizing the ratings for the five categories and dividing by five) were utilized. Another measure of "job satisfaction" is a single item which is part of the "Facets of Life Satisfaction Scale" (Iris & Barret, 1972). This item was also rated on a seven-point Likert scale.

The context factor of "job security" was obtained from an item on the "Achievement of Work Values" scale (Hunt & Saul, 1975; Elizur, 1984) which rated "job security" on a five-point interval scale.

"Years of experience" and "number of days absent from work" were reported by respondents.

All items used from the larger survey instrument which were used to gather data for this study are found in Appendix B.

The Cronbach alpha reliability co-efficients have been shown (see Table 2) for all variables tested by four or more items on the questionnaire. Hackman and Oldham (1976) have demonstrated the Job Diagnostic Survey to be reliable and valid so this previously demonstrated reliability for other items from the Job Diagnostic Survey was accepted.

Data Analysis

Pearson correlation and stepwise multiple regression analyses were used to test hypotheses one to eight. These analyses, as well as the means and standard deviations, will be presented in narrative and tabular form.

The majority of researchers (Arnold & House, 1980; Bhagat & Chassie, 1980; Brief & Aldag, 1975; Champoux, 1980; Evans, Kiggundu, & House, 1979; Hackman & Oldham, 1976; Kiggundu, 1980; Knoop, 1981; Orpen, 1979; Umstot, Bell, & Mitchell, 1976) testing this model have used correlational analysis. Other researchers used some form of regression analysis (Abdel-Halim, 1979; Arnold & House, 1980; Dean & Brass, 1985; Hackman & Oldham, 1976; Peters & Champoux, 1985; Roberts & Glick, 1981; Terborg & Davis, 1982; Tyagi, 1985) or analysis of variance (Evans, Kiggundu, & House,

1979; Hackman & Oldham, 1975; Kiggundu, 1983). In this study, data were analyzed using both correlational and stepwise multiple regression analysis

Summary

One hundred and seventy-two subjects participated in this quantitative correlational survey which examined the Job Characteristics Model as it applied to the Academic faculty of an Ontario community college. The data were collected via a mailed questionnaire on all variables of the model. Pertinent demographic data were obtained as well. The data were collected over a nine-month period and submitted for computer analysis.

CHAPTER FOUR

Findings

Introduction

This chapter is divided into two sections. The first section presents the descriptive data for the sample studied, describing the means, standard deviations, Cronbach alpha reliability co-efficients of the variables measured by the survey, and the Pearson correlation co-efficients for all variables. The second section describes the findings for each of the eight hypotheses.

Descriptive Data

The means, standard deviations and Cronbach alpha reliability co-efficients of all variables are given in Table 2. The means and standard deviations for the Job Diagnostic survey national norms described by Hackman and Oldham (1980, p.105) and the means and standard deviations for the job category of professional and technical employees described by Hackman and Oldham (1980, p.317) are included for comparison.

The means of all variables in this study were relatively high. All variables were rated on a seven-point Likert scale with the exception of the context factor "satisfaction with job security" which was rated on a five-point Likert scale. The

DESCRIPTIVE STATISTICS AND
MEANS, STANDARD DEVIATION AND
CRONBACH ALPHA RELIABILITY COEFFICIENTS
OF ALL MODEL VARIABLES

	Current Study			JDS Norms		JDS Professional and Technical Survey	
	M	SD	Alpha	M	SD	M	SD
<u>Job Characteristics</u>							
Skill variety	5.67	1.17		4.66	1.22	5.4	1.0
Task identity	4.91	1.19		4.71	1.25	5.1	1.2
Task significance	5.63	1.05		5.51	1.09	5.6	0.95
Autonomy	5.53	1.21		4.87	1.17	5.4	1.0
Feedback	4.98	1.29		4.87	1.21	5.1	1.1
MPS	155.65	68.79		128		155	55
MPS (additive)	26.77	3.79					
<u>Psychological States</u>							
Experienced meaningfulness	5.96	0.89		5.15	0.97	5.4	0.87
Experienced responsibility	6.01	0.64	0.51	5.46	0.82	5.8	0.72
Knowledge of results	5.51	1.01		5.00	1.03	5.0	0.99
<u>Outcomes</u>							
Internal Motivation	6.04	0.71	0.59	5.58	0.77	5.8	0.65
<u>General Job Satisfaction =</u>							
Satisfaction with work	5.42	0.97	0.81				
Overall job satisfaction	5.19	0.72	0.68	4.70	1.07	4.9	0.99
Satisfaction with job	5.49	1.20					
Performance	5.78	0.87					
Absenteeism	2.19	5.53					
<u>Individual Differences of Employees</u>							
Growth need Strength	6.21	0.82	0.89	5.70	1.05	6.1	0.82
<u>Experience =</u>							
Knowledge and Skill	8.79	8.22					
<u>Context Satisfaction</u>							
Job security	3.96	0.94		4.9		5.0	1.2
Pay	5.26	1.05	0.90	4.3		4.4	1.5
Co-workers	5.34	0.92	0.83	5.4		5.5	0.85
Supervision	5.29	1.24	0.82	4.9		4.9	1.3

(a) = number of n's - current study

(b) = source

Arnold & House 1980

Hackman & Oldham 1980 a) p. 105

(c) = Hackman & Oldham 1980 a) p. 317

variable "absenteeism" is a measure of the number of days Academic faculty report being absent from work over the previous year. The variable "experience" is a measure of the number of years Academic faculty report being in their present position.

The mean scores of the core job characteristics for the present sample were all higher than for the JDS norms but have a similar standard deviation. The mean scores of this sample compare to the means of the professional/technical group although "task identity" and "feedback" had slightly lower means in the community college faculty. The standard deviations for the community college faculty were all slightly higher than the professional/technical group indicating a wider spread among the responses.

The "motivating potential score" when calculated using the Hackman and Oldham (1976) formula was somewhat higher for the community college faculty than the JDS norm but exactly the same as the comparable professional/technical group. Hackman and Oldham did not report the additive method of calculating the MPS for either the JDS norms of the professional/technical group so a comparison was not possible.

The means for the critical psychological states found in this survey were consistently higher than the means of the professional/technical group and the JDS norms. The standard deviation was similar for all three groups.

Means for the personal and work outcomes "internal motivation" and "general job satisfaction" were higher than the means of either the JDS norms or the professional/technical group. The mean of 6.04 with a standard deviation of 0.71 for "internal work motivation" is particularly noteworthy indicating the presence of a high degree of self-motivation regarding their work demonstrated by employees in this particular sample.

Work performance was rated by the Academic faculty using a single item on the questionnaire. "Performance" had a high mean of 5.8 and a standard deviation <1. Neither of the other reports includes a mean for this variable.

"Absenteeism" for this sample was reported as having a mean of 2.19 days but a wide standard deviation of 5.53 so the amount of time missed from work varied considerably among faculty. The mean for "experience" was 8.8 or 9 years but again there was a large standard deviation reported here.

"Growth need strength" had a very high mean of 6.21. Responses were not widely varied as the standard deviation was <1. This was a higher mean than the JDS norms but only slightly higher than the mean of the professional/technical group. This result could mean that Academic faculty at this college demonstrate keen interest in personal development and avail themselves of opportunities for personal growth at work.

Context factors have been broken down to individual components for discussion. "Satisfaction with job security" was measured in this survey on a Likert scale of five points. The mean of 3.96 is high and compares to the JDS norms and the professional/technical group which were measured on a Likert scale of seven points. The standard deviation for the community college faculty is <1 . The mean scores for "satisfaction with pay" and "satisfaction with supervision" were higher for the community college faculty than either the means of the JDS norm or the professional/technical group while the mean of "satisfaction with co-workers" was the same.

The means and standard deviations for all variables presented here compared very closely to the means and standard deviations of the professional/technical group surveyed by Hackman and Oldham. They were higher in every case than the JDS national norms reported by Hackman and Oldham.

The Pearson correlation co-efficients for all variables in the model are reported in Table 3.

Findings of Hypothesis One

Hypothesis one states:

1. The critical psychological states will be influenced by the core job characteristics, that is experienced meaningfulness of work, experienced responsibility for the work, and knowledge of the actual outcomes of the work will be

predicted by skill variety, task identity, task significance, autonomy, and feedback.

The Job Characteristics Model states that the core job characteristics "skill variety", "task identity", and "task significance" relate to the critical psychological state "experienced meaningfulness of the work". In this study the task characteristics "skill variety", and "task identity" were moderately and significantly correlated to the psychological state "experienced meaningfulness of the work" (see Table 3). "Task significance" was correlated positively and significantly with "experienced meaningfulness of the work". The other two task characteristics "autonomy" and "feedback" were also correlated positively and significantly to "experienced meaningfulness of the work". The correlation of these latter two characteristics is lower than that of "skill variety" and "task identity" but higher than that of "task significance". The three task characteristics "skill variety", "task identity", and "task significance" were positively correlated to the other psychological states but the co-efficient was lower than in the predicted relationship and not always statistically significant.

"Autonomy" showed a moderate, significant correlation to its predicted psychological state "experienced responsibility for the work". Again "autonomy" was correlated significantly to the psychological states "experienced meaningfulness of the work" and

TABLE 3
 PEARSON CORRELATION CO-EFFICIENTS
 BETWEEN JOB CHARACTERISTICS,
 PSYCHOLOGICAL STATES, PERSONAL AND WORK, OUTCOMES
 AND MODERATING VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Skill variety																					
2. Task identity	.26**																				
3. Task significance	.32**	.40**																			
4. Autonomy	.17	.27**	.23*																		
5. Feedback	.21*	.30**	.09	.38**																	
6. MPS	.40**	.57**	.43**	.73**	.79**																
7. MPS (additive)	.61**	.70**	.60**	.66**	.64**	.92**															
8. Experienced meaningfulness of work	.44**	.33**	.24*	.31**	.32**	.42**	.51**														
9. Experienced responsibility for work	.22*	.25**	.22*	.33**	.25**	.36**	.41**	.28**													
10. Knowledge of actual work outcome	.10	.22*	.08	.19*	.26**	.29**	.27**	.08	.28**												
11. Internal work motivation	.38**	.21**	.17	.19	.17	.28**	.36**	.49**	.28**	.14											
12. Satisfaction with work	.39**	.37*	.33**	.35**	.32**	.50**	.56**	.49**	.30**	.08	.31										
13. Overall job satisfaction	.21*	.38*	.25*	.30**	.44**	.50**	.50**	.37**	.28**	.18	.17	.68**									
14. Satisfaction with job	.19*	.18*	.19*	.33**	.33*	.36**	.38**	.52**	.27**	.14**	.28**	.61**	.53**								
15. Performance (self)	.02	.13	.11	.17	.16	.24*	.18*	.08	.19*	.27**	.12	.26**	.28**	.28**							
16. Absenteeism	.02	.04	.03	.05	.03	.01	.03	-.03	-.02	.04	.05	.03	-.001	.02	.05						
17. Experience = Knowledge and Skill	.01	.01	.01	.01	-.001	-.002	.01	.08	.07	-.12	.02	.07	.08	.10	.16	.16					
18. Growth Need Strength Context Satisfaction	.25**	.05	.01	.08	.16	.16	.19*	.09	.15	.10	.05	.26**	.18	.17	.15	.11	.02				
19. Job Security	-.14	.04	-.10	.06	.11	.10	.003	-.03	.07	.17	-.04	.02	.24*	.15	.15	-.01	.11	.08			
20. Pay	.11	.13	.07	.002	.20*	.15	.16	.21*	.07	.14	.07	.31**	.65*	.24**	.23*	.04	.18	.15	.45**		
21. Co-workers	.24**	.26**	.20*	.20*	.26**	.33**	.36**	.26**	.18	.11	.10	.43**	.60**	.36**	.23*	.1	.05	.02	.01	.23*	
22. Supervision	.02	.23*	.15	.21*	.26**	.30**	.28**	.08	.19	.08	-.02	.28**	.67*	.21*	.09	.05	.03	.03	.04	.21*	.29**

* p<.05

** p<.01

"knowledge of the actual outcomes of the work" but these correlations were lower than the task characteristics which are predicted to relate to these psychological states.

The task characteristic "feedback" demonstrated a moderate, significant correlation to the psychological state "knowledge of the actual outcomes of the work" and had the highest correlation of any task characteristic to this psychological state. The other task characteristics were all positively related to this psychological state but of these only "task identity" and "autonomy" were statistically significant and their correlations were lower than that of "feedback". "Feedback" had a higher correlation with the other two psychological states than with "knowledge of actual outcomes of the work".

The correlation of the "motivating potential score" was moderate to high with all the psychological states, stronger than any of the relationships between individual variables. Both methods of calculation had similar correlation co-efficients.

Stepwise multiple regression analysis (see Table 4) demonstrated the ability of the task characteristics to predict the psychological states. For the psychological state "experienced meaningfulness of the work", the characteristics "skill variety" and "task identity" entered the equation. "Autonomy" which is not a predictor of this psychological state also entered the equation between the other two core

characteristics. "Task significance" did not enter the equation as it should have according to the model so its involvement is still best described as a weak positive correlation.

TABLE 4

Stepwise Multiple Regression Results with Critical Psychological States as Dependent Variables and Core Job Dimensions as Predictor Variables

Core Job Characteristics	Critical Psychological States		
	R^2	\hat{R}^2	Significance Level of R^2
	Experienced Meaningfulness of Work		
Skill variety	.19		.0000
Autonomy	.25	.06	.0000
Task identity	.27	.02	.0000
	Experienced Responsibility for the Work		
Autonomy	.11		.0000
Task identity	.14	.03	.0000
	Knowledge of the Results		
Feedback	.07		.0009

The psychological state "experienced responsibility for the work" was predicted in this survey by the two task characteristics "autonomy" as stated in the model and "task identity" which was not predicted by the model.

The core characteristic "feedback" accounted for a small percentage of the variance of the psychological state "knowledge of the actual results of work outcomes". No other task characteristics entered the equation here.

Hypothesis one was supported.

Findings of Hypothesis Two

Hypothesis two states:

2. Personal and work outcomes will be influenced by the three critical psychological states, that is, internal work motivation, general job satisfaction, performance, and absenteeism will be predicted by experienced meaningfulness of the work, experienced responsibility for the work, and knowledge of the actual outcomes of the work.

The psychological state "experienced meaningfulness of the work" was positively and significantly correlated with the outcome variables of "internal work motivation" and "general job satisfaction" (see Table 3). The correlation with the outcome "performance" was very low, 0.08, and was not statistically significant. "Absenteeism" showed a very low negative correlation with "experienced meaningfulness of the work".

The psychological state "experienced responsibility for the work" was correlated moderately but significantly with the outcomes "internal work motivation" and "general job

satisfaction". The correlation co-efficient was a bit lower but still statistically significant for the outcome "performance" but negligible for "absenteeism".

The psychological state "knowledge of the actual outcomes of the work" had a low positive correlation with "internal work motivation" and "general job satisfaction" and there was moderate, significant correlation of this psychological state with the outcome "performance". "Absenteeism" was not related to "knowledge of the actual results of the work".

Stepwise multiple regression (see Table 5) confirmed the correlations by establishing predictions. "Experienced meaningfulness of the work" accounted for twenty-four percent of the variance of the outcomes "internal work motivation" and "general job satisfaction". The psychological state "knowledge of the actual outcomes of the work" accounted for seven percent of the variance of the outcome "performance". "Absenteeism" drew no psychological states into the equation.

Hypothesis two was partially supported as the relationship between the critical psychological states and the outcome "absenteeism" was not upheld.

Findings of Hypothesis Three

Hypothesis three states:

3. Personal and work outcomes will be influenced by the five core job characteristics, that is, internal work motivation,

general job satisfaction, performance, and absenteeism will be predicted by skill variety, task identity, task significance, autonomy, and feedback.

TABLE 5

Stepwise Multiple Regression Results with Personal and Work Outcomes as Dependent Variables and Critical Psychological States as Predictor Variables

Critical Psychological States	Outcomes		
	R^2	\hat{R}^2	Significance Level of R^2
	Internal Work Motivation		
Experienced Meaningfulness	.24		.0000
Experienced Responsibility	.26	.02	.0000
	Satisfaction with Work		
Experienced Meaningfulness	.24		.0000
Experienced Responsibility	.27	.03	.0000
	Overall Job Satisfaction		
Experienced Meaningfulness	.14		.0000
Experienced Responsibility	.17	.03	.0000
	Satisfaction with the Job		
Experienced Meaningfulness	.28		.0000
	Performance		
Knowledge of Outcomes	.07		.0005
	Absenteeism		
No critical psychological states entered			

This direct relationship is not stated in the model but is inferred as the three psychological states together influence the personal and work outcomes. Some researchers (Brief & Aldag, 1975; Frank & Hackman, 1975; Hackman, Pearce & Wolfe, 1976; Staw & Oldham, 1978) have examined the relationship between the core characteristics and the psychological states either ignoring the psychological states entirely or in addition to examining the intervening effect of the psychological states. Hackman and Oldham (1976) also looked at this relationship but found the relationship of the core characteristics to personal and work outcomes was stronger when it operated through the psychological states.

The outcome "internal work motivation" was modestly correlated to the core job characteristics (see Table 3). "Skill variety", "task identity", and "autonomy" were correlated significantly with "internal work motivation" while "task significance" and "feedback" although correlated in a positive direction were not statistically significant.

The correlations of the core job dimensions with the job satisfaction variables were all positive and moderate. The only correlation which was not statistically significant was the "task identity" - "satisfaction with the job" correlation.

None of the correlations of the core job characteristics with the outcome "performance" were statistically significant but

all were in the predicted direction. The correlations of the core job characteristics with "absenteeism" were so small as to be negligible and therefore of no value.

The "motivating potential score", calculated by either the multiplication/addition method of Hackman and Oldham or the straight addition method, showed the strongest correlation of all the task characteristics with the outcomes. Both methods of calculation the MPS performed with about the same strength of correlation, the only major difference being in the correlation with "performance" which was stronger with the method used by Hackman and Oldham. This correlation was significant as well.

Stepwise multiple regression analyses (see Table 6) revealed that "skill variety" accounted for fourteen percent of the variance of the outcome "internal work motivation". This variable had the strongest correlation.

"General job satisfaction" which was measured on three different scales had all the core job characteristics enter on one of the scales indicating that all the core characteristics predicted the outcome of "general job satisfaction". "Autonomy" was the only core job characteristic to enter the equation with "performance". No core job characteristic entered the equation for "absenteeism".

TABLE 6

Stepwise Multiple Regression Results with Personal and Work Outcomes as Dependent Variables and Core Job Characteristics as Predictor Variables

Core Job Characteristics	Outcomes		
	R^2	ΔR^2	Significance Level of R^2
	Internal Work Motivation		
Skill variety	.14		.0000
	Satisfaction with Work		
Skill variety	.10		.0000
Task significance	.14	.04	.0000
Autonomy	.16	.02	.0000
	Overall Job Satisfaction		
Task identity	.09		.0002
Feedback	.13	.04	.0000
Task significance	.15	.02	.0000
	Satisfaction with the Job		
Autonomy	.12		.0000
Feedback	.16	.04	.0000
	Performance		
Autonomy	.04		.0099
	Absenteeism		
No core job characteristics entered			

Partial support was demonstrated for this hypothesis as all the core job characteristics did not consistently predict each of the personal and work outcomes.

Findings of Hypothesis Four

Hypothesis four states:

4. The individual differences of employees will be influenced by the five core job characteristics, that is, experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision) will be predicted by skill variety, task identity, task significance, autonomy, and feedback.

The correlation of the core characteristics with the moderator variables was very low (see Table 3) and in most cases not statistically significant. The only relationships of note were that "skill variety" was correlated with "growth need strength" significantly at 0.25 and that two of the context factors, "satisfaction with co-workers" and "satisfaction with supervision" demonstrated low but statistically significant correlations with some task characteristics.

TABLE 7

Stepwise Multiple Regression Results with Individual Differences as Dependent Variables and Core Job Characteristics as Predictor Variables

Core Job Characteristics	Individual Differences		
	R ²	Δ R ²	Significance Level of R ²
			Growth Need Strength
Skill variety	.07		.0008
			Satisfaction with Pay
Feedback	.04		.02
			Satisfaction with Supervision
Feedback	.07		.0006
Autonomy	.10	.03	.0003
			Satisfaction with Co-workers
Feedback	.07		.0008
Task identity	.10	.03	.0002
			Job Security
			No core job characteristics entered
			Experience
			No core job characteristics entered

Stepwise multiple regression analyses (see Table 7) revealed that "skill variety" and "feedback" entered the equation as predictors of "growth need strength". "Feedback" weakly predicted three of the four context variables. "Autonomy" and "task

identity" predicted two of the four context variables. There was little support for this hypothesis.

Findings of Hypothesis Five

Hypothesis five states:

5. The critical psychological states will be influenced by individual differences of employees, that is, experienced meaningfulness of the work, experienced responsibility for the work, and knowledge of the actual outcomes of the work will be predicted by experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision).

The only correlations (see Table 3) discovered in this relation were low, significant correlations between two of the context factors with the psychological state "experienced meaningfulness of the work" and one context factor with the psychological state "experienced responsibility for the work".

Stepwise multiple regression analyses (see Table 8) demonstrated one of the four context variables weakly predicted each critical psychological state. The prediction was not meaningful as "satisfaction with context of the job" as a variable needs all four context factors present.

The hypothesis was not supported.

TABLE 8

Stepwise Multiple Regression Results with Critical Psychological States as Dependent Variables and Individual Differences as Predictor Variables

Individual Differences	Critical Psychological States		
	R ²	\hat{R}^2	Significance Level of R ²
Satisfaction with co-workers	.03		Experienced Meaningfulness .0000
Satisfaction with supervision	.03		Experienced Responsibility .0000
Job security	.03		Knowledge of Outcome .0000

Findings of Hypothesis Six

Hypothesis six states:

- The personal and work outcomes will be influenced by individual differences of employees, that is, internal work motivation, general job satisfaction, performance, and absenteeism will be predicted by experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision).

TABLE 9

Stepwise Multiple Regression Results with Personal and Work Outcomes as Dependent Variables and Individual Differences as Predictor Variables

Individual Differences	Personal and Work Outcomes		
	R^2	ΔR^2	Significance Level of R^2
Internal Work Motivation No variables entered			
Satisfaction with Work			
Satisfaction with Co-workers	.18		.0000
Growth Need Strength	.26	.08	.0000
Satisfaction with Pay	.28	.02	.0000
Overall Job Satisfaction			
Satisfaction with Supervision	.30		.0000
Satisfaction with Pay	.40	.10	.0000
Satisfaction with Co-workers	.62	.22	.0000
Satisfaction with the Job			
Satisfaction with Co-workers	.12		.0000
Growth Need Strength	.15	.03	.0000
Performance			
Satisfaction with Co-workers	.05		.0041
Growth Need Strength	.09	.04	.001
Experience	.12	.03	.0003
Absent			
Experience	.04		.02

Some significant correlations were found in the relationship between the moderator variables (individual differences of employees) and the personal and work outcomes (see Table 3). Moderate to strong correlations existed between context factors and the outcome "general job satisfaction". Lower, significant correlations were found with two context factors and the outcome "performance".

None of the moderator variables correlated with "internal work motivation". "Absenteeism" was positively but not significantly correlated with "experience" and "growth need strength".

The outcome "internal work motivation" (see Table 9) had no moderating variables enter the equation indicating that none of the moderating variables had the ability to account for this outcome. "Job satisfaction" was predicted by three of the four context factors and by "growth need strength." "Performance" was weakly predicted by one context factor, "growth need strength", and "experience". "Absenteeism" was predicted by "experience".

Certainly there appears to be evidence of a direct relationship between the individual differences of "satisfaction with context" and "growth need strength" and the outcome "general job satisfaction".

Findings of Hypothesis Seven

Hypothesis seven states:

7. The relationship between the core job characteristics and the critical psychological states will be moderated by individual differences of employees, that is, experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision) are predicted to have a positive moderating effect on the relationship between the core job characteristics and the critical psychological states.

Stepwise multiple regression analyses (see Table 10) demonstrated that the context factor "satisfaction with co-workers" had the greatest ability to moderate the relationship between the core characteristics and the critical psychological states. It moderated the relationship between each core job characteristic (except "task significance") and a psychological state. Another context variable "satisfaction with job security" moderated the relationship between the core characteristic "task identity" and the psychological state "knowledge of the actual outcomes of the work".

The other individual characteristic with a moderating influence at this point in the model was "growth need strength"

moderating the relationship between "task identity" and the psychological state "experienced responsibility for the work".

The hypothesis was partially supported.

TABLE 10

Stepwise Multiple Regression Results with Critical Psychological States as Dependent Variable and Individual Differences as the Moderating Variables

Core Job Dimensions and Individual Differences	Critical Psychological States		
	R^2	\hat{R}^2	Significance Level of R^2
	Experienced Meaningfulness of work		
Skill variety X			
Satisfaction with Co-workers	.20		.0000
Feedback	.24	.04	.0000
Feedback X			
Satisfaction with Co-workers	.27	.03	.0000
Task identity X			
Satisfaction with Co-workers	.30	.03	.0000
	Experienced Responsibility for the Work		
Autonomy X			
Satisfaction with Co-workers	.12		.0000
Task identity X			
Growth need Strength	.17	.05	.0000
	Knowledge of the Actual Outcomes of Work		
Task identity X			
Job Security	.09		.0001
Autonomy	.12	.03	.0001

TABLE 11

Stepwise Multiple Regression Results with Personal and Work Outcomes As Dependent Variables and Individual Differences as the Moderating Variables

Psychological States and Individual Differences	Personal and Work Outcomes		
	R ²	Δ R ²	Significance Level of R ²
	Internal Work Motivation		
Experienced Meaningfulness of the Work	.23		.0000
Experienced Responsibility for the Work	.28	.03	.0000
	Satisfaction with Work		
Experienced Meaningfulness X Satisfaction with Co-workers	.32		
Experienced Responsibility X Growth Need Strength	.40	.08	.0000
Experienced Meaningfulness X Satisfaction with Pay	.42	.02	.0000
	Overall Job Satisfaction		
Experienced Meaningfulness X Satisfaction with Supervision	.58		.0000
Experienced Responsibility X Satisfaction with Pay	.73	.15	.0000
Experienced Responsibility X Satisfaction with Co-workers	.77	.04	.0000
Experienced Responsibility	.84	.07	.0000
Experience Meaningfulness	.85	.01	.0000
	Satisfaction with the Job		
Experienced Meaningfulness X Satisfaction with Co-workers	.27		.0000
Experienced Meaningfulness X Growth Need Strength	.33	.06	.0000
Experienced Responsibility X Satisfaction with Job Security	.36	.03	.0000

(continued)

TABLE 11 (continued)

TABLE 11 (continued) Stepwise Multiple Regression Results with Personal and Work Outcomes As Dependent Variables and Individual Differences as the Moderating Variables

Psychological States and Individual Differences	Personal and Work Outcomes		
	R^2	\hat{R}^2	Significance Level of R^2
	Performance		
Knowledge of Results X Satisfaction with Co-workers	.09		.0002
Experienced Responsibility X Experience	.14	.05	.0000
Experienced Responsibility X Growth Need Strength	.16	.02	.0000
	Absent		
Knowledge of Results X Experience	.04		.01

Finding of Hypothesis Eight

Hypothesis eight states:

8. The relationship between the psychological states and the personal and work outcomes will be moderated by individual differences of employees, that is, experience, growth need strength, and context factors (satisfaction with job security, satisfaction with pay, satisfaction with co-workers, satisfaction with supervision) are predicted to have a positive moderating effect on the relationship

between the critical psychological states and the personal and work outcomes.

Stepwise multiple regression analyses (see Table 11) revealed that none of the individual characteristics moderated the relationship between the psychological states and the outcome "internal work motivation".

The relationship between the psychological states "experienced meaningfulness of the work" and "experienced responsibility for the work" and the outcome "general job satisfaction" was moderated by all four of the context factors and "growth need strength". These relationships were strong and statistically significant.

The relationship between the psychological states "knowledge of the actual outcomes of the work" and "experienced responsibility for the work" and the outcome "performance" was moderated by one context variable, "growth need strength", and "experience".

The relationship between "knowledge of the actual outcomes of the work" and "absenteeism" was moderated by the individual characteristic "experience".

The hypothesis was partially supported.

Summary

The results of correlational and stepwise multiple regression analyses were reported for each of the eight hypotheses.

The relationships outlined between the core job characteristics and the critical psychological states and between the critical psychological states and all personal and work outcomes but "absenteeism" were supported. The individual differences of employees demonstrated a stronger positive moderating effect between the critical psychological states and the personal and work outcomes than between the core job characteristics and the critical psychological states.

CHAPTER FIVE

Discussion of Results

Summary of the Findings

This survey tested the Job Characteristics Model with a population of Academic faculty in an Ontario community college. The relationships of the model were upheld as predicted. The moderating influence of the individual differences of employees was somewhat weaker than that predicted by the model. The core job characteristics influenced and were able to predict critical psychological states. The critical psychological states influenced and predicted all the personal and work outcomes but not "absenteeism". The results were similar to those achieved by other researchers who have tested the model (Arnold & House, 1980; Brief & Aldag, 1975; Champoux, 1980; Evans, Kiggundu, & House, 1979; Hackman & Oldham, 1976; Knoop, 1981; Orpen, 1979; Rousseau, 1977; Sims & Szilagy, 1976; Terborg & Davis, 1982; Tyagi, 1985; Umstot, Bell, & Mitchell, 1976; Wanous, 1974).

Past research has demonstrated a lack of support for the variable "decreased absenteeism and turnover" as an outcome of the core job characteristics (Evans, Kiggundu, & House, 1979; Frank & Hackman, 1975; Hackman & Oldham, 1976; Hackman, Pearce & Wolfe, 1978; Kiggundu, 1980).

Elements of two of the variables measuring individual differences of employees, "satisfaction with context" (two of the four factors) and "growth need strength" moderated the relationship between the core job characteristics and the critical psychological states. All three moderating variables influenced the relationship between the critical psychological states and all the personal and work outcomes but "internal work motivation". Previous research has shown difficulty with the moderating effect of the individual characteristics, "growth need strength" and "context" factors (Arnold & House, 1980; Brief & Aldag, 1975; Hackman, Pearce, & Wolfe, 1978; Hackman & Oldham, 1976; Steers & Spencer, 1977; Terborg & Davis, 1982; Tyagi, 1985). The moderating effect did not occur at the predicted points, was weak, or did not influence all outcomes. No previous research discussing the moderating effect of "knowledge and skill" of the employee was found in the literature.

Specific Aspects of the Findings

Hypothesis one examined the relationship of the core job characteristics to the critical psychological states. The relationships predicted by the model were upheld but were not as specific as stated by the model. With the exception of "task significance", the core characteristics were able to predict their corresponding critical psychological states. "Task significance" was positively but not significantly correlated to its

corresponding psychological state "experienced meaningfulness of the work". "Autonomy" showed some ability to predict "experienced meaningfulness of the work" as well as predicting its corresponding psychological state "experienced responsibility for the work". All core job characteristics were positively and often significantly related to all critical psychological states. Other research supporting the relationships between the core characteristics and the critical psychological states was done by Arnold and House (1980), Hackman and Oldham (1975, 1976), Kiggundu (1980, 1983) and Tyagi (1985) who found statistically significant support for this relationship although not all relationships between the core job characteristics and the critical psychological states were as specific as predicted by the model.

As previously stated, a number of researchers have chosen to ignore the relationship between the core job characteristics and the critical psychological states but Hackman and Oldham have stated (1980; Oldham & Hackman, 1980) that the psychological states are critical and form a central focus for the model. Roberts and Glick (1981) criticized other researchers for ignoring the psychological states.

Hypothesis two examined the relationship between the critical psychological states and the personal and work outcomes. This hypothesis was partially supported as no support for the outcome "absenteeism" was demonstrated. The other three outcomes

"internal work motivation", "general job satisfaction" and "performance" were supported as outcomes by correlational analysis and stepwise multiple regression. Previous research has also shown a lack of support for the outcome "decreased absenteeism and turnover" (Evans, Kiggundu, & House, 1979; Frank & Hackman, 1975; Hackman & Oldham, 1976; Hackman, Pearce & Wolfe, 1978; Kiggundu 1980). Orpen (1979) found absenteeism did decrease significantly after job enrichment for a group of employees who were surveyed before and after task redesign.

The relationship between the critical psychological states and the personal and work outcomes has been supported by Arnold and House (1980), Hackman and Oldham (1976), and Tyagi (1985). Arnold and House (1980) found they could not support the premise that all three psychological states had to be present simultaneously for employees to experience positive personal and work outcomes but were able to support relationships between the individual psychological states and outcomes. Hackman and Oldham (1976) found the relationship between the psychological states and the personal and work outcomes to be stronger than that between the core job characteristics and the personal and work outcomes when psychological states were not considered.

Hypothesis three considered the relationship between the core job characteristics and the personal and work outcomes without the mediation of the critical psychological states. The

outcome "general job satisfaction" was the only outcome which was predicted by all the job characteristics. "Internal work motivation" was predicted by two core job characteristics and "performance" was predicted by one job characteristic. "Absenteeism" was not predicted by any of the core job characteristics. The hypothesis was only partially supported and then modestly. This result emphasizes the need for the inclusion of the critical psychological states in the model.

Hypotheses four, five and six attempt to discover any direct relationship which existed between the variables of the model and the individual differences of employees which were defined as moderating variables in the model. No direct relationships were expected to emerge here as none are predicted by the model.

Hypothesis four examined the direct effect of the core job characteristics on the moderator variables. None was discovered in this survey. Previous research by Bhagat and Chassie (1980) and Orpen (1979) investigated the effect of changes in the core characteristics on the "satisfaction with context" variable and found no change.

Hypothesis five concerning the direct relationship of the individual differences of employees with the critical psychological states was not supported. Only a low significant correlation occurred between two of the context factors and two psychological states and this cannot be considered meaningful as

it was not consistent for even the four factors of the context variable. The moderating variable "satisfaction with context" demonstrated a minor ability to predict the three psychological states.

Hypothesis six, which considered the relationship between the individual differences of employees and the personal and work outcomes, had some interesting results.

The outcome "general job satisfaction" was predicted by all of the context factors and "growth need strength". This relationship was not predicted by the model nor was evidence of this relationship found in the literature. The predictions were strong, statistically significant and open to speculation the relationship of the previously defined moderator variables to the personal and work outcomes. One possible explanation is the fact that overall job satisfaction is determined to some degree by the level of satisfaction with the various aspects of the job, including the satisfaction with the specific job aspects investigated in the present study.

Hypotheses seven and eight examined the moderating effects of the individual differences of employees at the two points designated by Hackman and Oldham in the model. "Growth need strength" has been studied frequently as a moderator variable. Previous research has established support for "growth need strength" moderating the relationships between the core job

characteristics, critical psychological states and personal and work outcomes (Arnold & House, 1980; Bhagat & Chassie, 1980; Champoux, 1980; Hackman & Lawler, 1971; Hackman & Oldham, 1976; Hackman, Oldham, & Pearce, 1976; Hackman, Pearce & Wolfe, 1978; Orpen, 1979; Pokorney, Gilmore & Beehr, 1980; Salancik & Pfeffer, 1978; Wanous, 1974). Other researchers have had difficulty demonstrating that "growth need strength" did moderate the model with any strength at the point between the core job characteristics and the personal and work outcomes (Arnold & House, 1980; Brief & Aldag, 1975; Evans, Kiggundu & House, 1979; Hackman & Oldham, 1980; Steers & Spencer, 1977; Terborg & Davis, 1982; Tyagi, 1985). Some researchers have been able to support context factors as moderating variables (Abdel-Halim, 1979; Hackman, Oldham & Pearce, 1976; Orpen, 1979). No discussion of the moderating effect of the individual variable "knowledge and skill with the job" was found in the literature. Throughout the years, investigators have proposed other moderating variables but none of these have been adopted.

Hypothesis seven refers to the moderation of the individual differences of employees on the relationship between the core job characteristics and the critical psychological states.

Two of the context factors, "satisfaction with co-workers" and "satisfaction with job security", acted as moderators. "Growth need strength" also moderated between the task

characteristic "task identity" and the psychological state "experienced responsibility for the work". The strongest moderator variable and the only consistent one was "satisfaction with co-workers". This result demonstrates minimal ability of the individual differences of employees in this sample to moderate the relationship between the core job characteristics and the critical psychological states.

Hypothesis eight examined the moderation of the individual differences of employees on the relationship between the psychological states and the personal and work outcomes.

None of the individual differences of employees moderated the relationship between the critical psychological states and the outcome "internal work motivation". Instead, two of the psychological states show up as predictor variables thus indicating that "internal work motivation" is a direct result of the critical psychological states and the core task characteristics. According to the Job Characteristics theory, "growth need strength" was expected to significantly moderate the relationship between the psychological states and "internal work motivation". Although the sample studied demonstrated high "growth need strength" (mean=6.21) it appears that with this sample this characteristic does not perform the moderating function for this most important outcome.

Both "growth need strength" and "satisfaction with context" moderated between the psychological states and the outcome "general job satisfaction". In addition to this moderating function, however, both of these moderating variables also had a direct relationship with and an ability to predict this outcome. This second relationship was not considered in the model and may influence the moderation function which was demonstrated by these two individual differences between the psychological states and the outcome "general job satisfaction".

The relationship between the psychological states and the outcome "performance" was moderated by each of the individual differences of employees (although only one of the four context variables entered). The outcome "performance" is one of the most difficult outcomes to support; however, the moderator variables have performed exactly as predicted by the model with this sample.

The individual difference "experience" moderated the relationship between one psychological state "knowledge of the actual outcomes of the work" and the outcome "absenteeism". Because this outcome has garnered no support as an outcome, the moderating effect is not significant. It is of note, though, that the individual difference "knowledge and skill" indicated in this study by "experience" has only shown up as a moderating factor in this relationship and in the relationship between the

psychological states and the outcome "performance". It has not acted as stated in the model.

Theoretical Implications

This research study verified the predicted relationships of the Job Characteristics Model in an educational setting, a somewhat different population than the applications in business and technology that have been previously used. The outcome "absenteeism" was not validated as an outcome of the core characteristics and should be removed from the model and the Job Diagnostic Survey. Refer to previous evidence by Evans, Kiggundu & House, 1979; Frank & Hackman, 1975; Hackman, Pearce & Wolfe, 1978; Kiggundu, 1980; Orpen, 1979 and the 1980 Job Characteristics Model of Hackman and Oldham (1980). Because the model has been upheld as valid with this population, it may be used as a theoretical basis for the diagnosis and redesign of the jobs of Academic faculty in a community college setting.

The role of the moderating variables remains unclear. Hackman and Oldham proposed that the individual differences of employees moderated the relationship of the model at two points. Investigations cited in the literature of the moderating effect of the individual characteristics proposed by Hackman and Oldham have provided mixed support for this premise. This survey supported a moderating effect between the core characteristics and the psychological states for only "satisfaction with co-workers", an

element of the moderator "satisfaction with context". The individual differences had a moderating effect on the relationship between the psychological states and all outcomes but "internal work motivation". The context factors and "growth need strength" also had a direct influence on the outcomes "general job satisfaction" and to a lesser extent, "performance". This result is in addition to the theoretical expectations of the model. While the theory is logical, repeated difficulty has been encountered by researchers with the moderating effect of the individual differences of employees. One explanation for the lack of demonstrated moderating effect by the moderator variables may lie with the relatively small sample size. Their moderating effect may become evident if the sample size was increased.

The model should be used in its entirety in order to realize its full benefit. Hackman and Oldham have stated (1980; Oldham & Hackman, 1980; Roberts & Glick 1981) that taking portions of the model may result in inconsistent, invalid information and lead to job redesign failures. The entire model was considered in this survey.

Limitations of the Study

The limitations of the overall study must be addressed.

Since the total population of the Academic faculty of the community college was assessed, random sampling was not utilized. Responses were voluntary and a 32% response rate was utilized for

data analysis. Although this is average for a mailed questionnaire, caution must be used in generalizing the results to the entire Academic faculty.

While this survey was conducted, negotiations for a new collective agreement were underway and feelings about working conditions at this college were contrary to feelings expressed by other community colleges in the system. Caution in generalizing these results to other colleges in the Ontario system of Community Colleges of Applied Arts and Technology must be expressed as the feelings about job design may be different elsewhere.

The correlation design of the study prevents causal inference of the results. To determine cause and effect, an experimental study must be undertaken.

Application of the Model

The model was used in a survey of Academic faculty at a community college. Because the propositions of the model were upheld, it may be used for two purposes within the college setting:

1. the diagnosis of the job characteristics of Academic faculty; and
2. the redesign of any of these jobs following diagnosis

3. the assessment of the milieu of a particular college by means of measuring of the variables of the Job Characteristics Model.

Within the elementary and secondary school system, examination of the job characteristics may lead to redesign of teaching jobs. Dissatisfaction with teaching jobs may have an effect on student attrition or vice versa.

The jobs of Academic faculty in a community college fall within three major categories - Teaching Masters, who are the people in the classroom, Chairmen, who are middle management, and Deans, who are senior management. Co-ordinators, who are first level managers between the Teaching Masters and Chairmen, are classified as Teaching Masters and frequently carry out the co-ordinating function in addition to a regular teaching assignment. The function of co-ordinator varies widely within the various departments of the college. The Academic faculty are subdivided by division, faculty, and department. Each subdivision and job category has unique characteristics and problems. While this survey has validated the use of the model in this educational setting and given an overall impression of the environment of the organization, meaningful practical application for the purposes of design/redesign of specific jobs should be done with smaller groups within the organization. Because of the diversity of tasks and responsibilities of each position, application of the model

with individual groups, either by faculty or position, is more useful.

The job characteristics described by Hackman and Oldham are present in the tasks done by Academic faculty hence the relevance of this model in this setting. Academic faculty at a community college have a unique set of demands placed upon them. All faculty have worked in their selected field for at least two years. They now teach in their selected field although very few have formal preparation in educational theory. There is a twofold demand placed upon faculty: to keep up with the advances in their specific fields and reflect these in the course content as well as utilizing innovative, creative, teaching strategies and techniques. Most faculty are involved in curriculum development, another skill in which the majority have no training. "Skill variety", "task identity", and "task significance" are evident in teaching responsibilities which combine both a theoretical and practical component i.e., teachers practise in the classroom and in a practical laboratory situation. Students in the community college enter a specific stream which will lead to vocational certification. Faculty identify closely with their contribution to the vocation. Faculty who teach subjects e.g., humanities, to groups of students from different vocational streams often adapt the course content so it relates more specifically to the individual vocational groups.

Faculty have a great deal of autonomy regarding their work with students and other faculty. Curriculum development and delivery is individualized for each programme and often each group of students. These are controlled by the classroom teacher.

Feedback from the job is available from the students about course content and delivery and from student achievement measures about student success (and vicariously teacher success). Because the clients of the system are adults who have a financial investment in the system, they are very willing to provide faculty with feedback which helps shape the future direction of the curriculum.

This survey revealed that faculty collectively had a "motivating potential score" of 156 - higher but not statistically significant ($p < .7$) than the JDS norm of 128 established by Hackman and Oldham (1980). The Job Characteristics Model can then be used to examine the outcomes of "internal work motivation" and "general job satisfaction" for Academic faculty within the college. The means for these two variables were high in this sample. "Growth need strength" is a measure of the desire for personal accomplishment, learning and self-development - all desirable qualities in a teacher and present in this sample as indicated by a high mean.

Although the results of the study cannot be generalized to all community colleges, the use of the Job Characteristics Model

can be extended to other colleges. The climate of each college in Ontario is different because of its unique organization, leadership and administration, and the people and programmes within the college. The two applications (large survey for overall climate and job design problems and smaller group survey for specific task design/redesign) are both practical and meaningful in any community college.

The model may also be applied to nursing administration. This is another area where traditional approaches to work design abound and where a theory such as this is applicable.

Implications for Future Research

The outcome "decreased absenteeism and turnover" should be removed as an outcome from the Job Characteristics Model and all corresponding items must be removed from the Job Diagnostic Survey. This outcome has only rarely been supported and should be eliminated from the model. Hackman and Oldham (1980) have substituted "increased satisfaction with growth" for "decreased absenteeism and turnover". The description of "satisfaction with growth" resembles that of the individual characteristic "growth need strength" which is confusing. If the variable "growth satisfaction" is to be used, its definition needs to be clarified and differentiated from "growth need strength". Investigation needs to be conducted into its viability as an outcome separate from "growth need strength".

The greatest shortcoming of this model is its inability to take into consideration the organizational environment. While this shortcoming has been criticized by other researchers, few have come up with viable alternatives that can be acted upon. Griffin (1987) has shown the most promise by combining the Job Characteristics model with the Social Information Processing approach and suggesting the use of the Multimethod Job Design Questionnaire (Campion & Thayer, 1982) as a data-gathering tool. His model and the questionnaire need to be considered and used with the same population to see what comparison exists and if the organizational setting is taken into consideration. Another strategy may be to expand the individual characteristic "context" and remove it from its moderating role to one of a task characteristic.

When research is considered using the Job Characteristics Model, the model needs to be considered in its entirety. Variables should not be taken out of context. Use of other reliable, valid instruments for measuring the variables is acceptable.

More investigation needs to be conducted around the moderating variables. Only minimal moderation was shown by individual differences of employees between the core job characteristics and the psychological states. In this population the mean for the individual characteristic "growth need strength"

was remarkably high, indicating that a desire for growth was strong but it did not moderate "internal work motivation" as expected. In addition, evidence in this study indicated that "growth need strength" and "context" factors have more influence on the personal and work outcomes than has been allowed previously. They were correlated with some strength, with the outcomes "general job satisfaction" and to a lesser degree, "performance". This is contrary to Herzberg's (Herzberg, Mausner & Snyderman, 1959) Motivator-Hygiene theory where dissatisfaction with the hygienic factors of context is said to promote job dissatisfaction but not affect job satisfaction.

In this population "knowledge and skill" is another moderator variable which did not moderate as strongly as predicted. No discussion of other investigations of this variable was found in the literature. The theoretical premise is logical but the research evidence is weak.

Further application of the model in post-secondary education settings, particularly the community college, would extend the credibility of the model.

CHAPTER SIX

Conclusion

Summary of the Study

There has been a constant search for ways to make work meaningful to employees so they will be motivated to perform their best and achieve a degree of satisfaction from the work they do. Theories of organizational behaviour have been developed since the early part of this century and are constantly being refined. Theories have ranged from the scientific approach which broke work down to its smallest task components and did not always have the desired effect, to the human relations approach which began to look at the people who did the work as well as the work itself. The behaviorists concentrated on making the job suit the workers and newer trends such as the Sociotechnical Approach and the Social Information Processing system include manipulation of the work environment and the task to suit the workers. The Job Characteristics Model has been the most successful and most used model of task design in business and industry. Despite its limited ability to relate to the organizational environment, it remains a model with a sound theoretical base and has a valid, reliable instrument for data collection. The purpose of this study was to test the predictions of the model in an educational environment, particularly a community college. If the model was

supported then individual areas of the college have a model and instrument for further evaluation, diagnosis and change of job design. The model also provides an impression of the milieu of the working environment of the community college.

A survey study was designed to evaluate the Job Characteristics Model in an Ontario community college. Data were collected through the administration of a questionnaire to a total population (n=550) of Academic faculty (Teaching Masters, Chairmen, and Deans) of an Ontario community college. This correlational survey received a 45% response rate and 32% of the questionnaires were used. The sample was composed of highly educated men and women with substantial experience as indicated by tenure.

Data analysis through Pearson correlation and stepwise multiple regression analyses revealed that the core job characteristics had an ability to predict the critical psychological states and the critical psychological states were able to predict all the personal and work outcomes but "absenteeism". The moderator variable "satisfaction with co-workers", an element of the individual characteristic "satisfaction with context", was the only variable to moderate the relationship between core characteristics and the critical psychological states but all individual differences of employees moderated the relationship between the critical psychological

states and all the personal and work outcomes except "internal work motivation". Two of the individual difference variables "context" and "growth need strength" demonstrated an ability to predict the outcome "general job satisfaction".

Conclusion

The relationships among the variables of the Job Characteristics Model of Hackman and Oldham were upheld in this study of the model in a community college setting. The model has been tested previously in business and technology as well as in the service industry. Generally these applications have supported the model although much criticism has been directed at the model over the years. The Job Characteristics Model has required only one minor change - that of removing the outcome "decreased absenteeism and turnover".

Its strengths include:

- a sound theoretical basis which has evolved as a behaviorist approach to organizational behaviour considering the task at hand, the needs of employees, and the context in which the work occurs;
- a complete model explicitly describing the relationship between the variables; and
- a diagnostic tool, the Job Diagnostic Survey, which has been demonstrated as a valid and reliable instrument for measurement of the variables of the Job Characteristics Model.

The Job Characteristics Model was designed to diagnose the need for job redesign and then define the areas of the task which

require redesign. This diagnostic function is important as is using the entire model in any application. Within the literature are many examples of failures of the model because of job redesign without previous diagnosis or portion of the model being applied or tested.

In this study, the complete model was tested with a population of post-secondary educators, to determine whether it was applicable in this setting and might be used for purposes of job design/redesign.

The core job characteristics, "skill variety", "task identity", and "autonomy" predicted the psychological state "experienced meaningfulness of the work". "Autonomy" and "task identity" predicted the psychological state "experienced responsibility for the work", while "feedback" predicted "knowledge of the actual results of the work". All core characteristics were positively correlated with all the critical psychological states with the relationships predicted by the model being generally stronger.

The critical psychological states predicted all the personal and work outcomes but "absenteeism". The psychological states were positively correlated with all the personal and work outcomes except "absenteeism". The variables of the model performed as predicted by the model except "absenteeism" which was not upheld as an outcome.

The individual differences of employees were predicted by the model to act as moderating variables on the relationship between the core job characteristics and the psychological states and on the relationship between the psychological states and the personal and work outcomes.

Only one of the four context variables, "satisfaction with co-workers", performed this moderating function at the first point in the model. The three moderating variables moderated the model at the second point for all outcome variables except "internal work motivation". The moderating variables did not behave as predicted in this study. In addition, two of the moderating variables predicted the outcome "general job satisfaction". These results lead to the conclusion that the moderating variables need to be re-examined with this particular population. The sample demonstrated significant "growth need strength", (mean = 6.21), but the function of this variable for this population in the model is not clear. "Growth need strength" and "internal work motivation" are tied together in the model, but this link was not evident in this study.

Despite this question, the Job Characteristics Model may be applied to this population of post-secondary educators as the predictions of the model were upheld. The model may be used to measure the climate or milieu within a community college regarding task characteristics, the strength of the critical psychological

states, and the personal and work outcomes. In addition, the model may be used, with smaller groups, to diagnose, design or redesign specific jobs. This study has indicated some very positive attributes are present in the jobs of Academic faculty at this community college.

The positive personal and work outcomes found in this population indicate that employees experience the inner satisfaction of performing well and this feeling serves to motivate them to continue working with a high level of performance. A self-generated work - reward cycle operates as a powerful reinforcement of work activity.

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APPENDIX A

CORRESPONDENCE RE: DISTRIBUTION OF THE QUESTIONNAIRE

MEMORANDUM

TO: _____, Associate Dean, Nursing
 FROM: Mary Guise
 DATE: January 2, 1987
 SUBJECT: Proposal for Thesis for Masters of Education Degree.

I have completed the course work for my Master of Education degree at Brock University and am ready to proceed with a thesis. This is the proposal for my thesis and a copy of the questionnaire. I would like an appointment with you to discuss this proposal and permission to administer the questionnaire to Faculty early in the New Year.

My thesis will center around the motivation of teachers in the Community College setting in the Department of Nursing. I have selected a theory by J. Richard Hackman and Greg. R. Oldham to examine the relationship between the job design of a teaching master in the Nursing Department at _____ College and the positive and personal work outcomes which they have defined can occur when three psychological states are met. I am postulating these three psychological states are met by teaching masters in nursing at this college and the positive personal and work characteristics are experienced by faculty. The job I refer to is that of implementing the self directed, modularized nursing programme in the classroom and clinical settings. If the data supports further examination, I will note any differences between Level I teachers and Level II teachers as implementation of the two levels is slightly different.

MODEL

CORE JOB DIMENSIONS	CRITICAL PSYCHOLOGICAL STATES	PERSONAL AND WORK OUTCOMES
1. Skill Variety	Experienced meaningfulness of work	High internal motivation
2. Task Identity		
3. Task significance		
4. Autonomy	Experienced responsibility for outcomes of the work	High quality work performance
5. Feedback	Knowledge of the actual results of the work	High satisfaction with the work
		Low absenteeism and turnover

I would like to collect the data during the winter semester via this questionnaire. The questions pertaining to this study are part of a larger survey developed by Dr. R. Knoop of Brock University to examine the effects of several personal and organizational variables on work outcomes. I have included a copy of his research proposal for this larger study. All data will be collated via computer at Brock University and remain anonymous. The larger project will take place over a five year period. My study is a small portion of the larger one.

The sample used for data collection will be all faculty in the Department of Nursing at College. Participation will be voluntary. Faculty will receive a questionnaire which they will be asked to answer anonymously. The questionnaire will be distributed in faculty mail boxes in and .

Results of the survey and any conclusions will be shared with faculty and the I.R.C. Bound copies of the thesis will be given to the Department of Nursing and the Instructional Resource Centre. As I do not intend to apply for funding there will be no cost to the College. I anticipate finishing this study by December 1987.

My intention is to publish the results of the study. I will not identify the College by name and would submit any such articles to the department for review before publication.

Thank you for your attention.

Sincerely,

Mary Guise

MEMORANDUM

TO: _____, Associate Dean, Nursing
FROM: Mary Guise
DATE: May 6, 1987.
RE: Thesis for Master of Education Degree

I have had an initial meeting with my thesis committee and discussed with them the proposal for my Master's thesis. While they were agreeable to the general topic. I have had to make some changes in the original proposal. Because it is a thesis and not a project, they have asked me to test the Hackman and Oldham Model in an educational setting rather than using it as a diagnostic tool for assessment of the perception of nursing teachers of their jobs. The testing of the model must be formal and follow qualitative research procedures. As the model has fifteen variables in it and I must discuss all relationships between the variables. it will be necessary for me to expand the sample size of the population to approximately 200. This will necessitate surveying an additional 300 faculty from the college and redefining my population as Community College Teaching Masters rather than Nursing Teachers.

I wish to use a random sample of teachers from the

College and distribute the questionnaires in September to obtain data by the end of September. I was considering distribution of the questionnaires through the Programme Chairmen after presenting the purpose and method of the study to them. Again the information would be confidential and College will not be identified by name in the thesis or any publication based on it.

In addition, I can offer to the Department of Nursing and any other programme which wishes the information. the diagnostic survey I originally proposed. This would be original research surveying the perceptions of Teaching Masters of their jobs and measuring their internal motivation, degree of job satisfaction, growth satisfaction and work effectiveness. It would be written up as a research study for the College and separate from my thesis. I have had an excellent response from the faculty (over 55 responses) and will have the information to present this as an independent project if the Department is interested.

Because of the increased scope of the study and thus increased cost to me. I wish to apply to the Instructional Resource Centre for a Research and Development Grant to assist me with printing and processing costs. I need also to know who I must approach for permission to do the expanded study and how best I can facilitate a high response from the questionnaires which I distribute.

TO: , Chairman, Chairmen's Planning Group

FROM: Mary Guise and Deborah Kyle, Faculty, Dept. of Nursing

DATE: June 22, 1987

RE: Research Proposal

Thankyou for the opportunity of meeting with the Chairmen's Planning Group on June 17, 1987 regarding our theses proposals. We appreciate the input given by the group at that time. We have considered the issues discussed and have explored the alternatives that were suggested related to coding, distribution and return of the questionnaires. Subsequently we have developed a plan to facilitate the data collection. This plan is outlined below.

1. Coding of the Questionnaires

The respondents will be asked to enter their position in the organization as well as their department on the final page of the questionnaire titled "Personal and Organizational Demographic Data".

The completed questionnaire will be sent directly to Brock University where the information will be coded by Dr. Knoop as the data is entered in the computer. The information will, therefore, remain confidential.

2. Return of the Questionnaire

We will provide an addressed envelope for the completed questionnaire that can be sealed by the respondents, before return to a box number in the mailroom. The envelopes will be forwarded, unopened to Dr. Knoop at Brock University.

3. Distribution of Questionnaires

In order to ensure the response that we require, we have decided to survey all full-time academic Teaching Masters plus the Chairmen and Deans.

, Programme Manager, Newstart Nursing is also participating in the Brock study and will be surveying the part-time faculty at a future date.

The alternatives that we identified for the distribution of the questionnaires are:

1. the office of the Vice-President Academic
2. the academic Chairmen
3. the stewards of Local

We favour the first alternative as this office is highly respected by faculty and administration. Moreover it lends support to our endeavours.

- 2 -

..... June 22, 1987

We would appreciate the opportunity of addressing the Chairmen's group to explain the purpose and design of our research. We will also be approaching the Executive of Local , OPSEU to make a similar presentation. These sessions will allow clarification and discussion amongst key participants in our study which is important to the success of the project.

Yours truly,

Deborah Kyle
Mary Guise

/d
c.c. Associate Dean, Nursing

TO: , Associate Dean, Nursing

FROM: Mary Guise and Deborah Kyle, Faculty, Dept. of Nursing

DATE: June 22, 1987

RE: Research Proposal

We would like to thank you for the assistance you gave us in meeting with the Chairmen's Planning Group to discuss our proposed research. The discussion and feedback from the group was both helpful and positive and we have incorporated some of their ideas in our questionnaire distribution plan.

In particular, the Chairmen felt that by distributing the questionnaires through the office of the Vice-President Academic, we would gain credibility and avoid respondent concern regarding confidentiality. Following consideration of this idea plus other alternatives we tended to agree with the Chairmen. Therefore, we feel the need to approach to discuss this plan and gain her approval for its implementation.

We have also made the decision to increase our sample size to include all full time academic teaching masters. This will ensure the response we require for our research and provide a substantial data base that College can access for future study. The estimated cost increase for this would involve the printing of the extra questionnaires (approx. \$200.00). We have received a verbal commitment of financial support for our research from so the increase in the sample size will not create a problem.

We would like to meet with you to discuss the changes that we have made as well as the procedure we should follow for setting up a meeting time with all of the Academic Chairmen.

Yours truly,

Deborah Kyle
Mary Guise

/d

MEMORANDUM

TO: ASSOCIATE DEAN, NURSING

FROM: MARY GUISE

DATE: July 13, 1987

RE: THESIS FOR MASTER OF EDUCATION DEGREE

I have completed the course work for my Master of Education degree at Brock University and am ready to proceed with a thesis. I am seeking permission to conduct research at College for my thesis using a random sample of Teaching Masters. I have sought and received permission to survey the Teaching Masters in the Department of Nursing. I distributed the questionnaire attached to this memo to the Nursing faculty in March and have received an excellent response from them.

My thesis topic examines the characteristics of a job and how these affect employee performance. I am testing a model of job characteristics developed by J. Richard Hackman and Greg R. Oldham in 1976 and revised in 1980. This model has been extensively tested in the work environments of science and industry and very nicely outlines the characteristics of jobs which have been found to motivate employees to greater job satisfaction and high quality performance. To date, I can find no application of this theory in the educational setting. I am particularly interested in applying the theory to the post secondary area. The model has five Core Job Dimensions which I feel are relevant to Teaching Masters in the Community College setting. If I can demonstrate the model is valid in this setting, then it may be used as a diagnostic tool for job analysis and change in the Community College.

To adequately test the model, I must have a population of 200 Teaching Masters from College. This will necessitate sampling all Academic faculty to ensure a return of 200 or more questionnaires. Faculty would be asked to participate on a voluntary basis. All data gathered would be kept confidential and anonymous. It will become part of a data bank at Brock University which is accessible to Dr. Robert Knoop and other graduate students who supply data to the bank. The data is identified as coming from College only for purposes of data retrieval from the computer.

MEMORANDUM

DATE: July 13, 1987

RE: THESIS FOR MASTER OF EDUCATION DEGREE

Page 2

The questionnaire has been developed by Dr. Knoop to test many variables of organizational behavior. All material on the questionnaire has been taken from previously published valid, reliable research instruments. Because the questionnaire tests so many variables, I am able to work with Deborah Kyle in collecting data as we can use the same sample for the different topics we are investigating. Deborah is on faculty in the Department of Nursing and is doing a thesis on another aspect of organizational behaviour.

We wish to obtain permission to distribute the questionnaire to a random selection of faculty, through the Chairmen's offices sometime in September. To do this, we wish to present our proposals to the Chairmen's group and obtain their support. Faculty will be asked to return the questionnaire directly to us by internal mail.

Results of the survey on the Job Characteristics Model and any conclusions would be shared with faculty and the I.R.C. Bound copies of my thesis would be given to the Department of Nursing and the Instructional Resource Centre. I intend to apply for an Instructional Development Grant as I feel the study has a direct benefit to the College. I have discussed this with _____ and am working on a proposal for this grant.

My intention is to publish the results of the study. I would not identify the College by name and would submit any such articles to the Department of Nursing for review before publication.

Thank you for your attention.

Sincerely,

Mary Guise

COLLEGE OF APPLIED ARTS AND TECHNOLOGY

M E M O R A N D U M

TO: Associate Dean of Nursing
Faculty of Community Studies and Health Care

FROM: Dean
Faculty of Community Studies and Health Care

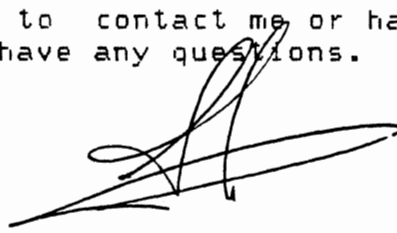
DATE: August 28, 1987

RE: Proposal for Research Study - M. Guise and D. Kyle

Personally I have no objection to Mary and Deborah using administration and faculty in completing their research papers. However, in view of the nature of the research, the nature of the questionnaires and the numbers and types of individuals to be surveyed, I am unable to give them permission to go ahead. I really think that they will have to get permission from the Vice-President, Academic and the President. It is even possible that the President may wish to take the request to the Board of Governors.

I think that they should immediately initiate requests to the President asking permission to carry out the research. The requests should completely describe what and how they intend to do (similar to what was included in the package that you sent to me). When they have completed this, I would suggest that they send the requests to me and I will move them up the line and try to facilitate as quick a response as possible.

Please do not hesitate to contact me or have Mary or Deborah contact me if you or they have any questions.



les

MEMORANDUM

TO: President, College

FROM: Mary Guise and Deborah Kyle
Teaching Masters, Department of Nursing

DATE: September 2, 1987

RE: Research Proposal

We are completing the requirements for a Master of Education degree at Brock University and are ready to proceed with our theses. We are seeking permission to conduct research at College by surveying Academic Faculty, Chairmen and Deans. We are conducting independent studies which are based upon two different theoretical models but we are able to collect data through the use of a common questionnaire. We have included our individual proposals with this letter.

The questionnaire was prepared by Dr. Robert Knoop of Brock University from previously published reliable, validated instruments. It was developed to test many variables of organizational behaviour which are described in the enclosed booklet titled "SURVEY RESEARCH - CONCEPTUALIZATION * VARIABLES * MEASURES". We have also included a copy of the questionnaire.

Participation in our studies is voluntary and all data gathered will be anonymous and confidential. It will become part of a data bank at Brock University which is accessible to Dr. Robert Knoop and other graduate students who supply data to the bank. The data is identified as coming from College only for purposes of data retrieval from the computer.

MEMORANDUM

DATE: September 2, 1987

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RE Research Proposal

Page 2

The respondents will be asked to return the questionnaire in a sealed envelope to Brock University via a mailbox in the mailroom at College. This will ensure anonymity of response. The data will be entered in the computer at Brock and become part of the large data base. The analysis of the data will be done by a computer using the Statistics Package for Social Sciences (SPSS) method.

We wish to obtain permission to distribute the questionnaire to the Faculty, Chairmen and Deans. Upon receiving permission, we would be willing to attend a VPAD meeting and a Chairmen's meeting to describe our studies. We will address Faculty with a letter accompanying the questionnaire and an article in "The ".

Thank you for your attention.

Sincerely,

Mary Guise
Deborah Kyle

COLLEGE OF APPLIED ARTS AND TECHNOLOGY
FACULTY OF COMMUNITY STUDIES AND HEALTH CARE
DEPARTMENT OF NURSING

M E M O R A N D U M

TO: Dean of Community Studies and Health Care

FROM: _____, Associate Dean, Nursing

DATE: September 4, 1987

RE: Research Studies - Mary Guise and Deborah Kyle

Please find enclosed two proposals from two faculty of the Department of Nursing. They plan to use the same questionnaire and collection of data so are, in one way, collaborating.

Mary Guise did survey the nursing faculty only earlier with permission at the Faculty level, but found that her sample had to be much larger on the direction of her advisor from Brock University.

I support the proposals in principle, but recognize that the dimensions require approval at a senior level. On your suggestion they have addressed their request to the President and have sent it through me to you for the correct line of communication.

As you know, they are anxious, if at all possible, to conduct the survey in October, well before December or they will need to wait until the winter.

Thank you for your consideration.

Associate Dean of Nursing

DL/am

Encl.

cc: Mary Guise
Deborah Kyle

COLLEGE OF APPLIED ARTS AND TECHNOLOGY

M E M O R A N D U M

TO: Vice-President, Academic

FROM: Dean
Faculty of Community Studies and Health Care

DATE: September 8, 1987

RE: Research Studies - Mary Guise and Deborah Kyle

Attached you will find a letter addressed to the President in which the above two members of the Nursing Department request permission to carry out the collection of data for their research study at College. Enclosed with their letter is a fairly detailed description of the purpose, procedure, and nature of the project.

I suggested that they address the letter to the President and route it up through , and me. Both of us are and have been quite supportive of their efforts. However, since the project now involves research beyond the Department of Nursing, I felt that official College, perhaps even Board of Governors, permission was required.

Would you kindly determine your support for the request and then take it to the President complete with your recommendation. I would appreciate being kept advised as to the progress of this request. Mary and Deborah are also anxious to have as speedy a response as possible as they, pending permission of course, would like to start their surveying in October.

Thank you for your attention to this matter.



cc D. Lambeth
D. Kyle
M. Guise ✓

MEMORANDUM

TO: _____, Associate Dean
Nursing

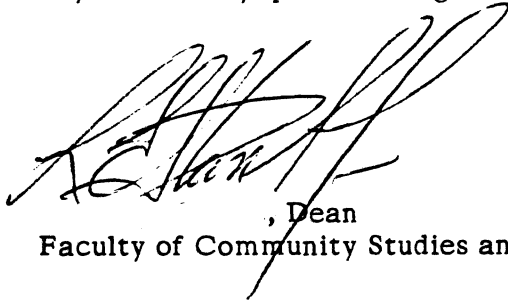
FROM: Dean, Faculty of Community Studies and Health Care

DATE: September 22, 1987

RE: Collection of Data Re Research Studies - Mary Guise
and Deborah Kyle

The Vice-President, Academic has discussed the above request with the President and he is very supportive of their efforts and has given his approval for them to proceed. Please convey this approval to both Mary and Deborah.

If you have any questions regarding the matter, please consult me directly.



_____, Dean
Faculty of Community Studies and Health Care

LES:br

MEMORANDUM

TO: The Director, Human Resources
FROM: The Vice-President, Academic
DATE: October 21, 1987
RE: Organizational Behaviour - Master of Education Thesis

Steve,

Ms. Debra Kyle and Ms. Mary Guise, Teaching Masters in the Department of Nursing are completing course requirements for a Master of Education degree at Brock University and are currently in the process of completing their theses.

Ms. Kyle and Ms. Guise made a presentation at the October 15 VPAD meeting outlining their project and the procedure for approaching the faculty at College requesting their assistance in completing the questionnaire.

It was noted at the VPAD meeting that all faculty will be sent a copy of the questionnaire and supporting documentation (attached) and it is hoped that sufficient numbers of questionnaires will be returned in order to accumulate valid data. VPAD and the Chairmen will also be asked to complete the questionnaire. The completed questionnaires will be handled in strict confidence and will be forwarded directly to Dr. Robert Knoop at Brock University. Ms. Guise and Ms. Kyle noted that the statistics would be available to them only after the computer had scored and compiled the results. The results will be available to those who participated in the survey as well as graduate students at a minimal cost from Brock University.

Articles will be placed in the _____ informing the faculty about this project and a meeting will be held with the Academic Chairmen to discuss the project further. It was suggested that the questionnaire and supporting documentation be forwarded to the Chairmen prior to the meeting.

It was acknowledged that the results from this project would be of benefit to the College and VPAD was asked if they were comfortable with the questionnaire, the procedure for approaching the faculty and the method for compilation of the data. No concerns were raised and VPAD was asked to ensure that their Chairmen and their faculty were aware of the project and to ensure that they understood that it would be handled in confidence. VPAD was also asked to encourage their Chairmen to attend the forthcoming meeting. It was also noted that this project has been reviewed by the President.

This is provided for your information, Steve. If you have any questions, please do not hesitate to contact Dean [redacted], Ms. Guise or Ms. Kyle.

ORIGINAL DESTROYED

MEH:gy
skb1020

cc The Dean, Community Studies & Health Care
The Associate Dean, Nursing
Ms. Mary Guise, Teaching Master, Nursing
Ms. Debra Kyle, Teaching Master, Nursing

MEMORANDUM

TO: Chairmen
College

FROM: Mary Guise and Deborah Kyle
Teaching Masters, Department of Nursing

DATE: October 22, 1987

RE: Research Proposal

We are completing the requirements for a Master of Education degree at Brock University and are ready to proceed with a thesis. We have received permission to conduct research at College by surveying Academic Faculty, Chairmen and Deans. We are conducting independent studies which are based upon two different theoretical models but we are able to collect data through the use of a common questionnaire.

The questionnaire was prepared by Dr. Robert Knoop of Brock University from perviously published reliable, validated instruments. It was developed to test many variables of organizational behaviour. We have available a document describing all the variables being surveyed in the questionnaire.

Participation in our studies is voluntary and all data gathered will be anonymous and confidential. It will become part of a data bank at Brock University which is accessible to Dr. Robert Knoop and other graduate students who supply data to the bank. The data is identified as coming from College only for purposes of data retrieval from the computer.

The respondents will be asked to return the questionnaire in a sealed envelope to Brock University via a mailbox in the mailroom at College. This will ensure anonymity of response. The data will be entered in the computer at Brock and become part of the large data base. The analysis of the data will be done by a computer using the Statistics Package for Social Sciences (SPSS) method.

MEMORANDUM

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DATE: October 22, 1987
RE: Research Proposal
Page 2

We have obtained permission to distribute the questionnaire to the Faculty, Chairmen and Deans. We have attended a VPAD meeting and described our studies to the Deans and wish to do so to the Chairmen on October 28. We will address Faculty with a letter accompanying the questionnaire and an article in "The ".

Thank you for your attention.

Sincerely,

Mary Guise
Deborah Kyle

Mary Guise
Deborah Kyle

COLLEGE OF APPLIED ARTS AND TECHNOLOGY
DEPARTMENT OF NURSING

M E M O R A N D U M

TO: FACULTY, CHAIRMEN, DEANS
FROM: MARY GUISE
DEBORAH KYLE
RE: ATTACHED QUESTIONNAIRE

We are completing the thesis requirement for a Master of Education Degree and would appreciate your assistance with the gathering of data.

This questionnaire examines a number of variables related to organizational behaviour and will become part of a larger data bank at Brock University.

Please fill out this questionnaire following the instructions inside. It should only take thirty minutes to complete. Keep in mind your first impression is probably the most accurate.

Seal the completed questionnaire in the envelope provided and return to the mail room at Campus. The envelopes will be sent to Brock University where the data will be entered into a computer.

All data reviewed will be anonymous and confidential and cannot be traced to the respondent. Results of our studies will be available in the libraries at Campus and Campus and from the Instructional Resource Centre. We will be happy to discuss our results with interested participants.

Thank you very much for your co-operation.

Mary Guise
Mary Guise
Teaching Master

Deborah Kyle
Deborah Kyle
Teaching Master

/am
Encl.

A FINAL REMINDER!

SEVERAL WEEKS AGO YOU RECEIVED A QUESTIONNAIRE FROM US. IF YOU HAVE COMPLETED AND RETURNED IT, THANK YOU VERY MUCH. IF NOT, WE WOULD APPRECIATE YOU TAKING A FEW MINUTES TO FILL IT IN. PLEASE ACCEPT OUR ASSURANCE THAT THIS QUESTIONNAIRE IS COMPLETELY CONFIDENTIAL. WE DO NOT SEE THE COMPLETED QUESTIONNAIRE AT ALL AND RECEIVE COLLATED DATA WHICH CANNOT BE TRACED BACK TO INDIVIDUAL RESPONDENTS OR THEIR DEPARTMENTS. THANK YOU FOR YOUR TIME AND EFFORT.

MARY GUISE AND DEBORAH KYLE

**WHERE DID THAT YELLOW QUESTIONNAIRE COME FROM?
WHAT IS IT?
WHY ME?**

by **Mary Guise and Deborah Kyle**
Nursing Campus

We are presently completing the thesis requirement for our Master of Education degrees at Brock University. Our research focus is the behaviour of people in organizations and the many variables that affect it. We are each studying a different aspect of organizational behaviour but have been able to collaborate on data collection through the use of a common questionnaire.

The questionnaire was developed by Dr. Robert Knoop of Brock University from previously published valid and reliable research instruments. The data we collect via the questionnaire will not only assist us with our individual research but will also become part of a large data bank on organizational behaviour in educational institutions. This data can be used by College to examine the variables we have not addressed.

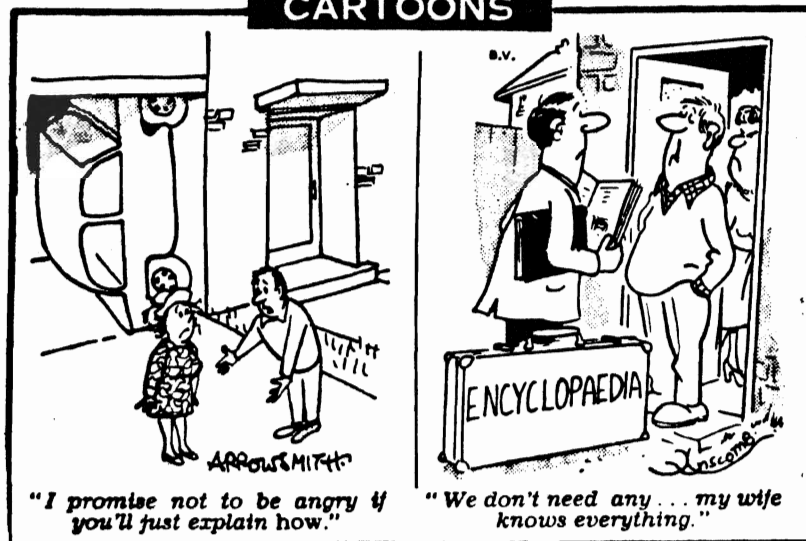
The questionnaires have been coded to define the linkage among academic faculty, chairmen and deans in the College. The coding does not identify individual faculties by name.

We have asked respondents to return the completed questionnaire to the mailroom at in the sealed envelope provided. These will be sent directly to Brock University, unopened. At Brock, the data will be entered into the computer data bank. when all the data from has been entered, we will each receive a printout that summarizes the variables studied.

We appreciate that the questionnaire is lengthy and requires time to complete. If you have completed the questionnaire already, **THANK YOU VERY MUCH!** If not, we encourage you to do so. Your participation is important because it will make our data more reflective of the organizational climate of College.

When our studies are complete we plan to present the results to various groups in the College. Bound copies of our theses will be available in the library and the Instructional Resource Center.

CARTOONS



APPENDIX B
QUESTIONNAIRE

DESIRABLE JOB CHARACTERISTICS

Listed below are a number of characteristics which could be present on any job. How much would you personally like to have them present in your job?

1	2	3	4	5	6	7
-----/-----		-----/-----		-----/-----		-----/-----
Would like having this in only a moderate amount			Would like having this very much		Would like having this extremely much	

1. __ Stimulating and challenging work
2. __ Chances to exercise independent thought and action.
3. __ Opportunities to learn new things from my work.
4. __ Opportunities to be creative and imaginative in my work.
5. __ Opportunities for personal growth and development.
6. __ A sense of worthwhile accomplishment in my work.

GROWTH NEED STRENGTH

SOURCE: Job Diagnostic Survey
Hackman and Oldham, 1975
Section Six

FACETS OF LIFE SATISFACTION

Job satisfaction, family satisfaction, and satisfaction with free time activities are components of life satisfaction. Compare all four and stated how satisfied you are with each:

How satisfied are you...

7	6	5	4	3	2	1
-----/-----/-----/-----/-----/-----/-----						
very			somewhat			not very
satisfied			satisfied			satisfied

58. __ with you job?

SATISFACTION WITH JOB

SOURCE: Iris and Barrett, 1972.

EFFORT AND PERFORMANCE

Now we are asking you how much effort you expend on the job, and how you rate the quality of your performance. Try to be objective. Circle one number for each.

179. Quality of you performance (low) 1 2 3 4 5 6 7(high)

PERFORMANCE

SOURCE: Porter and Lawler, 1968.

JOB SATISFACTION

This measure differentiates between various types of satisfaction: with the work itself, with pay, with promotions, with the supervisor, and with co-workers

- | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
|------------------|-------------|-------|-------|-------|-------|-------|-------|---------------|
| 194. WORK: | Exciting | /---- | /---- | /---- | /---- | /---- | /---- | Dull |
| 195. | Unpleasant | /---- | /---- | /---- | /---- | /---- | /---- | Pleasant |
| 196. | Challenging | /---- | /---- | /---- | /---- | /---- | /---- | Unchallenging |
| 197. | Satisfying | /---- | /---- | /---- | /---- | /---- | /---- | Unsatisfying |
| 198. PAY: | Rewarding | /---- | /---- | /---- | /---- | /---- | /---- | Unrewarding |
| 199. | Large | /---- | /---- | /---- | /---- | /---- | /---- | Small |
| 200. | Wrong | /---- | /---- | /---- | /---- | /---- | /---- | Right |
| 201. | Positive | /---- | /---- | /---- | /---- | /---- | /---- | Negative |
| 202. PROMOTIONS: | Unjust | /---- | /---- | /---- | /---- | /---- | /---- | Just |
| 203. | Reliable | /---- | /---- | /---- | /---- | /---- | /---- | Unreliable |
| 204. | Positive | /---- | /---- | /---- | /---- | /---- | /---- | Negative |
| 205. | Reasonable | /---- | /---- | /---- | /---- | /---- | /---- | Unreasonable |
| 206. SUPERVISOR: | Near | /---- | /---- | /---- | /---- | /---- | /---- | Distant |
| 207. | Sincere | /---- | /---- | /---- | /---- | /---- | /---- | Insincere |
| 208. | Unfriendly | /---- | /---- | /---- | /---- | /---- | /---- | Friendly |
| 209. | Qualified | /---- | /---- | /---- | /---- | /---- | /---- | Unqualified |
| 210. CO-WORKERS: | Careful | /---- | /---- | /---- | /---- | /---- | /---- | Careless |
| 211. | Loyal | /---- | /---- | /---- | /---- | /---- | /---- | Disloyal |
| 212. | Pleasant | /---- | /---- | /---- | /---- | /---- | /---- | Unpleasant |
| 213. | Boring | /---- | /---- | /---- | /---- | /---- | /---- | Interesting |

OVERALL JOB SATISFACTION

SOURCE: Hatfield, Robinson, and Huseman, 1985

YOUR JOB

Listed below are a number of statements which could be used to describe a job. Please indicate whether each statement is an accurate or inaccurate description of your job. Be as objective as you can regardless of whether you like or dislike your job.

HOW ACCURATE IS THE STATEMENT IN DESCRIBING YOUR JOB?

	1	2	3	4	5	6	7
	-----/	-----/	-----/	-----/	-----/	-----/	-----/
very	mostly	slightly	uncert-	slightly	mostly	very	
accurate	inaccu-	inaccu-	ain	accurate	accu-	accurate	
	rate	rate			rate		

217. __ The job requires me to use a number of complex of high-level skills.
218. __ The results of my activities cannot be seen.
219. __ Just doing the work required by the job provides many chances for me to figure out how well I am doing.
220. __ The job is simple and repetitive.
221. __ This job is one where a lot of other people can be affected by how well the work gets done.
222. __ The job denies me any chance to use my personal initiative or judgment in carrying out the work.
223. __ The job lets me do "identifiable" work.
224. __ The job itself provides very few clues about whether or not I am performing well.
225. __ The job gives me considerable opportunity for independence and freedom in how I do the work.
226. __ The job itself is not very significant or important in the broader scheme of things.

CORE JOB CHARACTERISTICS

SOURCE: Job Diagnostic Survey
 Section one: 218, 223
 Section two: all others
 Hackman and Oldham, 1975.

ACHIEVEMENT OF WORK VALUES

Below are listed 16 job factors. How much of each do you CURRENTLY EXPERIENCE in your job?

5	4	3	2	1
-----/-----	-----/-----	-----/-----	-----/-----	-----/-----
Very much	much	some	little	very little

255. __ Job security

JOB SECURITY

SOURCE: Elizur, 1984; Hunt and Saul, 1975

FEELINGS ABOUT THE JOB

Now please indicate how YOU PERSONALLY FEEL about your job. Use the scale below to show how much you agree with each statement.

1	2	3	4	5	6	7
-----/-----	-----/-----	-----/-----	-----/-----	-----/-----	-----/-----	-----/-----
Strongly	Disagree	Disagree	Neutral	Agree	Agree	Agree
disagree		slightly		slightly		strongly

263. ___ It's hard for me to care very much about whether or not the work gets done right.
264. ___ My opinion of myself goes up when I do this job well.
265. ___ Most of the things I have to do on this job seem useless or trivial.
266. ___ I usually know whether or not my work is satisfactory on this job.
267. ___ I feel a great sense of personal satisfaction when I do this job well.
268. ___ The work I do on this job is very meaningful to me.
269. ___ I feel a very high degree of personal responsibility for the work I do.
270. ___ I feel bad and unhappy when I discover that I have performed poorly.
271. ___ I often have trouble figuring out whether I am doing well or poorly.
272. ___ I feel I should Personally take the credit or blame for the results of my work.
273. ___ My own feelings are generally not affected much one way or the other by how well I do on this job.
274. ___ Whether or not this job gets done right is clearly my responsibility.

EXPERIENCED PSYCHOLOGICAL STATES
INTERNAL WORK MOTIVATION

SOURCE: Job Diagnostic Survey
Sections three and five
Hackman and Oldham, 1975.

PERSONAL & ORGANIZATIONAL DEMOGRAPHIC DATA

305. JOB TITLE (your position in the organization) _____
306. NAME OF ORGANIZATION: _____
307. SUBUNIT (division, dept., school, etc.): _____
308. EDUCATION: (check highest)
- ____ no degree
 ____ bachelor
 ____ master
309. AGE: ___ less than 25 ___ 25-30 ___ 31-35 ___ 36-40
 ___ 41-45 ___ 46-50 ___ 51-55 ___ 61+
310. SEX: ___ male ___ female
311. MARITAL STATUS:
- ___ single ___ married ___ divorced
312. NUMBER OF CHILDREN: ___
- EXPERIENCE: (check all)
313. ___ years in present position
314. ___ years in present organization
315. ___ number of positions/jobs held during those years in this
 organization
316. ___ years' overall experience in this type of work
318. ___ years of experience in unrelated work
318. INCOME:
- ___ under \$20,000 ___ \$40,000-50,000
 ___ \$20,000-30,000 ___ \$50,000-60,000
 ___ \$30,000-40,000 ___ over \$60,000
319. SIZE OF ORGANIZATION:
- ___ number of employees

THANK YOU!