

Facilitating Flow at Work: Analysis of the
Dispositional Flow Scale-2 in the Workplace

by

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Abstract

Facilitating Flow at Work: Analysis of the Dispositional Flow Scale-2 in the Workplace

By Jonathan Deitcher

The current research investigated the relationship of eight Canadian Forces Occupational Stress Questionnaire (CFOSQ) job characteristics, and transformational leadership as measured by the Global Transformational Leadership (GTL) with flow and its nine dimensions as defined by Csikszentmihalyi (1990), measured by the Dispositional Flow Scale-2 (DFS-2). The sample was comprised of SMU students and non-SMU participants, who were working at the time of the study. The results showed that none of the job characteristics or transformational leadership had a significant relationship with flow and all nine dimensions. One important outcome of the present research is that a nine dimension flow model may be overly complex in a work context. Contrary to expectations transformational leadership did not have a significant relationship with flow or any of the nine dimensions. Routinization and skill use had the highest number of significant relationships with flow and the nine dimensions.

November 24, 2011

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Facilitating Flow at Work: Analysis of the Dispositional Flow Scale-2 in the Workplace

Much of the work in the field of industrial/organizational psychology to date has focused on the negative: work stressors, lateness, absenteeism, theft, etc. This is at least partly a result of the tendency in psychology to focus research on pathologies, traumas, and negative behaviors, which in turn, is driven by the employment and funding opportunities offered to those studying and treating mental illness (Luthans, 2001, 2002). The positive psychology movement has recently emerged as a counterweight to this focus. The field of positive psychology examines the value of positive experiences such as well-being, contentment, satisfaction, hope and optimism (Seligman & Csikszentmihalyi, 2000). In the area of work psychology, Luthans has been a champion of focusing on positive organizational behaviour (POB).

Positive organizational behaviour is defined as “the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002, p.59). POB concentrates on states that are open to development and related to performance improvements in the workplace. One of the best known POB concepts is confidence, also known as self-efficacy (Luthans, 2002). Confidence is seen as a perfect example of a POB state because it has been linked to high performance in the workplace (Stajkovic & Luthans, 1998) and research has shown that it can be developed and improved (Bandura, 1997). A second concept that has been researched and evaluated empirically over the last decade is flow. The flow state is a

positive experiential state that is defined as feeling “totally involved, lost in a seemingly effortless performance,” (Gardner, Csikszentmihalyi, and Damon, 2001, p. 5) and can occur in whatever context that people are able to feel a deep sense of enjoyment. More recent research has shown that flow is at least somewhat dependent on job control factors as well as leadership within the organization. The current research aims to measure the relationship between these elements in a workplace setting, using a scale that was originally designed to measure flow in a sports/athletic setting (Jackson & Ecklund, 2004).

The Flow State

Research on the flow state has shown that people in completely different circumstances report similar feelings (Csikszentmihalyi, 2003). Flow often occurs when individual skills meet the challenges of a task at the highest level. Csikszentmihalyi described the experience as everything coming together. According to Csikszentmihalyi, people who describe being in a flow state often perform at very high levels. Flow can occur at different levels of complexity and the flow experience is enjoyable no matter how simple or complicated the activity may be. A central characteristic of flow is that the person pushes him/herself beyond their normal experience of challenge and skills.

The construct of flow, as originally defined by Csikszentmihalyi (1990), consisted of nine dimensions. These nine dimensions are defined as follows:

Challenge-skill balance. Challenges are akin to actions or goals. Skills are the capacities possessed to generate desired outcomes. A critical factor in the challenge-skill balance is

the perception of challenge and skill in the given situation or activity. The perception regarding what is possible is more important than the objective skill level. In addition, the challenge is perceived in a personal way, outside the established level of the challenge. When a person is in a flow state, challenges and skills are harmonized, going beyond the normal levels of exertion and experience for that person. Challenges and skills can be adjusted in almost any setting. This allows flow to be an accessible experience in many different contexts.

Action-awareness merging. When experiencing the flow state, a person feels as if he/she is one with the activity being performed. The person is totally absorbed into what he/she is doing. Athletes describe a sense of effortlessness associated with this dimension.

Clear goals. People in a flow state describe knowing clearly what they are supposed to do. The person is completely connected to the activity, and this leads to clarity of purpose. Sport is an ideal setting for the flow state because it has clearly defined goals and rules. This well-defined structure allows the athlete to focus on the immediate tasks. Goals play a crucial role in reaching a sense of achievement in any context. Goals provide a focus that helps reach the flow state.

Unambiguous feedback. Having clear goals is important in understanding how performance is progressing in relation to those goals. Feedback tells the individual whether or not he/she is on the way to achieving their goals. Feedback can come from a variety of internal and external sources. When there are clear goals, the individual may

know if he/she is on the right track. Additionally, other people or machines, depending on the context, can also provide useful feedback. Feedback does not have to be positive for the flow state to occur or continue. When in the flow state, the feedback is immediately and effortlessly assimilated into performance.

Total concentration on the task at hand. This is the defining characteristic of the flow state. A person in flow is totally focused on the task at hand, and is able to completely block out extraneous thoughts and distractions. The person experiences the moment clearly, and this provides a great deal of satisfaction. This is one of the most often cited characteristics of the flow state. Flow is experienced in instances when one's attention is exclusively concentrated on the activity occurring in the present moment.

Sense of control. The feeling of being in complete control is another oft-mentioned characteristic of flow. Individuals describe a feeling of infallibility or unbreakable self-esteem when in the flow state. This feeling frees the individual from any concerns about failure that can often impact performance. There is a fine balance involved in the feelings of control. If a person feels perfectly in control for a prolonged period of time, they are likely to move from a state of flow to a feeling of boredom. It is the possibility of keeping the activity in perfect control that keeps the person in the flow state.

Loss of self-consciousness. The individual is no longer concerned with how he/she is perceived by other people when in the flow state. In any activity, criticism can pull attention away from the task and onto the self. Concern over this criticism must be quieted during flow. Flow can be thought of as "unselfconscious action."

Transformation of time. The flow state can impact a person's perceptions of time.

Different people experience this in different ways. People may perceive that time stops, slows down or speeds up. This perception results from the intensity of the flow state. The intensity can contribute to the perception of time slowing down, since a person may feel he/she has considerable time to perform an action, when in reality he/she only has a few seconds. Time may seem to speed up since a person can be so deeply engaged in what they are doing that they do not realize that a significant amount of time has passed. This dimension is experienced less frequently than the others. This may be due to the fact that it only occurs when the flow state is very intense.

Autotelic experience. Autotelic experience is a phrase coined by Csikszentmihalyi (1990) to describe the rewarding experience of the flow state. Autotelic comes from the combination of two Greek words: auto, meaning self and telos, meaning goal; that is, meaning to do something for its own sake. This is because the flow state is so enjoyable that it motivates people to return to the state. According to Csikszentmihalyi, this dimension is the end result of the other eight dimensions.

The combination of these nine dimensions of flow leads to optimal experience. The flow state has been reported across many different domains, including sports, music, and work (Csikszentmihalyi, 2003). Since the flow state can be developed if the above-described conditions are met, empirical research on flow in the workplace will fit into Luthans' definition of a POB. It would also be very useful to see if flow can be measured in the work setting, because it is associated with positive mood, task interest, and

performance (Eisenberger, Jones, Stinglhamber, Shanock, & Randall, 2005). Positive mood is also associated with individual mental health (Fredrickson & Losada, 2005). Although Csikszentmihalyi (1990) originally developed flow as a theoretical construct, subsequent research has developed scales to measure flow in an applied manner. Measuring flow can help create a work environment that will increase the likelihood of employees entering the flow state.

Measuring Flow

Various methods of measuring flow have been developed, some that focus on flow as a state and others that focus on flow as a trait. Jackson and Marsh (1996) developed the original FSS in an effort to empirically measure the construct of flow as a state. The FSS was designed to measure flow experiences in the domain of physical activity (Jackson & Marsh, 1996). Another approach to measuring flow is the experience sampling method (ESM) in which participants are prompted at various intervals (using a programmable electronic device) during an activity to record information about their current experience (Csikszentmihalyi, 1990). However, this method includes a limitation of interrupting the experience and therefore lowering the accuracy of the results (Kawabata, Mallett, & Jackson, 2007). In order to measure flow without interrupting performance, the FSS was designed to be administered immediately following the completion of the physical activity. The FSS was a 36 item self-report instrument. Item development was based on the abovementioned nine dimensions of flow, with four items measuring each of the nine dimensions, leading to the 36 item total.

The Dispositional Flow Scale (DFS) was developed to measure flow as a trait rather than a state, because Csikszentmihalyi proposed that there are individual differences in people's ability to experience flow (1990). According to Csikszentmihalyi (1990) some people are more prone to experiencing the flow state than others. This type of person is said to have an autotelic personality. The DFS was therefore developed to assess this dispositional tendency to experience flow in physical activity (Jackson, Kimiecik, Ford, & Marsh, 1998). Since the DFS was designed to assess autotelic personality tendencies, responses should be more stable over time in comparison to the FSS. Both the FSS and DFS have since been revised so that items and subscales would better conform to the overall flow dimension (Jackson & Ecklund, 2004, Jackson & Marsh, 1996, Vlachopoulos, Karageorghis & Terry, 2000). Kawabata, Mallett, and Jackson (2007) reported strong support for the validity and reliability of the both the FSS-2 and DFS-2 for measuring flow in a Japanese version and context.

Flow at Work

The ideal environment for reaching flow at work is not just one that rewards flow, or that attempts to motivate employees to reach towards flow, but rather, is an environment where careful attention has been paid to putting the antecedents to flow in place. Some of the antecedents to flow are at the job level and some are at the organizational level, but all have the potential for positive influence. A framework that includes clear goals, adequate feedback, a balance of applying skills and providing challenges, a sense of control, and a flexible use of time, is one that can be created by an

organization in order to lay the groundwork for flow (Csikszentmihalyi, 2003). The two latter antecedents, a sense of control and a flexible use of time, reflect an increasing understanding that providing employees with autonomy and/or control over their work environment increases intrinsic motivation and therefore, productivity. Flex-time in particular—allowing employees to create their own work schedules—is becoming more popular around the world (Barney & Elias, 2010). As organizations realize that not all employees perform equally well during traditional work hours and that a rigid schedule is not feasible for all employees, alternate work schedules are becoming more available and acceptable.

Job-level factors.

Various studies in the past decade have looked at a variety of job-level factors and their impact on flow in the workplace, and have concluded that factors such as autonomy, feedback, skill variety and supervisory coaching all contribute to experiencing the flow state (Bakker, 2005; Bakker, Demerouti, & Euwama, 2005; Demerouti, 2006; Bakker, 2008; Fullager and Kelloway, 2009; Nielson and Cleal, 2010). For example, Bakker (2005) demonstrated that job factors such as autonomy, performance feedback, social support, and supervisory coaching contributed to the experience of flow in music teachers. Furthermore, Bakker, Demerouti, and Euwema (2005) looked at the same job characteristics of autonomy, feedback, and supervisory coaching and evaluated their effects on employees' ability to cope with the demands of their jobs. They found that the

interaction between greater job demands and less available resources resulted in greater burnout (exhaustion, cynicism, reduced professional efficacy).

The research by Bakker, Demerouti, and Euwema (2005) demonstrates that the job-level antecedents of flow are actually staples of a productive workplace. These elements are an important factor in preventing employees from burning out and either leaving the company, or staying on and producing poor quality work, which runs counter to a state of flow.

In a study across various sectors and job positions in the Netherlands, Demerouti (2006) demonstrated that flow is related to job characteristics as defined by the Job Characteristics Model (JCM) (Hackman and Oldham, 1980). According to the JCM, there are five core job characteristics: skill variety, task identity, task significance, autonomy, and feedback, that impact three critical psychological states: experienced meaningfulness, experienced responsibility for outcomes and knowledge of the actual results, which in turn influence outcomes (satisfaction, absenteeism, motivation, etc.) (Hackman & Oldham, 1980). Demerouti (2006) demonstrated a relationship between the job characteristics of the JCM and the occurrence of flow, and that flow had a positive impact on performance for employees high in conscientiousness.

Studies have looked at what creates flow, as well as what maintains it. In a longitudinal study of Spanish secondary school teachers, Salanova, Bakker, and Llorens (2006) showed that organizational resources such as social support, innovation, and clear goals, on the one hand, and personal resources such as self-efficacy beliefs, on the other,

facilitated the occurrence of flow over time. Salanova et al. also found the inverse to be true: flow has a positive impact on personal and organizational resources.

Recently, studies have taken a closer look at measuring flow in the workplace. In a study developing the WOrk-reLated Flow inventory (WOLF), Bakker (2008) found that the job characteristics of work pressure, emotional demands, opportunities for self-growth, and autonomy all increased the possibility of flow. Similarly, Fullager and Kelloway (2009) in a longitudinal study of architecture students working on studio projects, found that skill variety and autonomy are two job characteristics from the JCM that contribute towards predicting flow. A recent study by Nielson and Cleal (2010) of line managers in an elder care company and an accountancy firm, demonstrated that the type of organization predicted flow, but unlike Bakker (2005) and Demerouti (2006), the authors found that stable job characteristics of role clarity and influence did not predict flow. They surmised that the conflicting results may be due to the fact that the previous studies focused on the trait aspect of flow, while the Nielson and Cleal (2010) study focused on the state aspect of flow.

Organizational-level factors.

As mentioned above, resources for and antecedents to flow, are to a large extent in the hands of the management. Though it is the employee who enters a flow state in a work place where flow has been optimized, management does play a role in creating opportunities for flow. One key managerial approach that would be expected to be an antecedent to flow is transformational leadership. Transformational leadership was

described by its founder, Burns (1978), as a form of leadership that redesigns perceptions and values, and changes expectations and aspirations of employees. As opposed to the transactional leadership approach, transformational leadership is not based on a “give and take” relationship, but rather on the leader’s personality, traits and ability to make a change by example and articulation of an energizing vision and challenging goals.

Transformational leaders are idealized as working for the benefit of the organization (Burns, 1978). The focus on the individual employee's perspective, considering what he needs and where greater opportunity may be created for him to thrive, as opposed to a focus on enforcement of company norms that aims to conform the employees to the organization rather than the other way around, may be manifested not only in individual managers' transformational leadership styles, but on an organizational culture level. The impact of transformational leadership on organizational culture, is to make it more open and flexible (Bass & Avolio, 1993), to facilitate high growth potential, and encourage innovation (Vera & Crossan, 2004). It follows that an environment conducive to innovation, one which encourages initiative, autonomy, and application of all available resources including individual talents, is one that might support flow.

Transformational leadership has a demonstrated positive impact on the organizational commitment of subordinates and on certain aspects of financial performance (Barling, Weber, & Kelloway 1996). Transformational leadership has also been shown to have an impact on subordinate motivation and performance (Masi & Cooke, 2000). In addition, when transformational leaders engaged in the behaviors of inspirational motivation,

idealized influence, intellectual stimulation and individualized consideration, their followers perceived higher levels of Hackman and Oldham's (1980) five core job characteristics (feedback, significance, variety, identity, and autonomy), and regarded their jobs as more challenging and important (Piccolo & Colquitt, 2006). As mentioned above, a feeling of autonomy, receiving feedback and being appropriately challenged at work are antecedents of flow.

One study took this apparent connection a step further and looked directly at the effects of leadership style (transactional / transformational) on flow. In a study of undergraduate students in a Group Decision Support System (GDSS) context, transformational leadership was shown to have some impact on causing flow, when input into the GDSS system was anonymous (Sosik, Kahai, and Avolio, 1999).

As with other factors, measures have been designed to evaluate levels of transformational leadership. One of these measures is the Global Transformational Leadership scale (Carless, Wearing & Mann, 2000). According to the authors, there are seven behaviors that are characteristic of transformational leaders that are measured in the Global Transformational Leadership (GTL) scale: creating a vision or clear goal and communicating to subordinates; facilitating and encouraging the development of subordinates; engaging in supportive leadership by giving positive feedback and recognizing subordinate achievements; empowering subordinates by involving them in the decision making process; using innovative and sometimes unconventional thinking and strategies to achieve goals; displaying consistency between their views and behavior

(leading by example); and demonstrating charismatic leadership. These behaviors are similar to the flow dimensions of clear goals, unambiguous feedback and sense of control. Since transformational leadership has been associated with motivational and performance outcomes (Barling, Weber, & Kelloway 1996, Masi & Cooke, 2000), and the characteristics of transformational leadership parallel those of the dimensions of flow, it can be hypothesized that transformational leadership should facilitate subordinates' ability to experience flow. This possibility was explored in the current research.

Despite more recent interest in the flow construct, empirical flow research in the work context is still a relatively undeveloped field. The current research aims to contribute to the still limited body of literature on flow by examining the relationship between eight specific job characteristics, as well as transformational leadership, and flow in the workplace. Furthermore, although certain studies explore the application of flow in work settings, there is almost no research that specifically examines Csikszentmihalyi's (1990) nine dimension flow model in a work context. As such, part of the current research aims to examine the relationship between the job characteristics and the nine dimensions of flow. More specifically, this study examines whether overall flow as measured by the combined subscales of the DFS-2 and the nine dimensions (challenge-skill balance, merging of action and awareness, clear goals, unambiguous feedback, concentration on task at hand, sense of control, loss of self-consciousness, transformation of time, autotelic experience) as measured by the subscales of the DFS-2, is related to transformational leadership, as measured by the Global Transformational

Leadership (GTL) scale, and to the eight job characteristics factors listed below, as measured by the Canadian Forces Occupational Stress Questionnaire (CFOSQ):

Quantitative load: The job requires too much work to get done and not enough time to complete it.

Qualitative load: Perception that individuals have to complete tasks for which they have little training or resources.

Routinization: The job has little or no variety and the same things are done over and over.

Skill use: The job allows the individual to learn and develop new skills while also being able to make use of existing skills and abilities.

Control: Control over time and work schedule.

Decision making: How much influence the individual has over their job and how they do their work.

Feedback and recognition: Recognition by authority of a job well done.

Coworkers: cohesion, working together as a team, and supporting one another.

Research Questions and Hypotheses

The study is guided by the following research questions and the specific hypotheses regarding the relationship between transformational leadership and the selected job characteristics, and flow and its nine dimensions:

1. What is the relationship between transformational leadership and the overall experience of flow as measured by the DFS-2 and the particular dimensions of flow as measured by the DFS-2 subscales?

H1: Transformational leadership, as measured by the GTL, will be positively related to the overall experience of flow and each of the nine dimensions.

2. How will the selected job characteristics (quantitative load, routinization, skill use, control, decision making, feedback and recognition, and coworkers) as measured by the

CFOSQ, related to the overall experience of flow as measured by the DFS-2 and the nine dimensions of flow as measured by the DFS-2 subscales?

H2: Quantitative load will be negatively related to flow and its nine dimensions.

H3: Qualitative load will be negatively related to flow and its nine dimensions.

H4: Routinization will be negatively related to flow and its nine dimensions.

H5: Skill use will be positively related to flow and its nine dimensions.

H6: Control will be positively related to flow and its nine dimensions.

H7: Decision making will be positively related to flow and its nine dimensions.

H8: Feedback and recognition will be positively related to flow and its nine dimensions.

H9: Coworkers will be positively related to flow and its nine dimensions.

Method

Participants and Procedures

A total of 267 participants completed the survey using a convenience sampling method. Data were collected from students at Saint Mary's University (SMU) in Halifax, Nova Scotia and from a convenience sample of non-SMU participants that were contacted via an email list. SMU participants were given a paper and pencil version of the survey, and were awarded one bonus point in a psychology class for participation. Prior to completing the survey, participants read, signed, and returned informed consent forms. For non-SMU participants, the survey was uploaded to an online survey hosting website (zoomerang.com) and a link was created and emailed to potential participants, along with

a brief explanation (Appendix A). The first page of the online survey was an informed consent form explaining to participants that by proceeding with the survey they agreed to participate in the study. Only participants who reported that they were currently working at the time of the survey were included in the final analysis ($N = 204$), of whom 65 reported that they were currently working full-time, and 139 reported that they were currently working part-time. The final sample included 147 SMU participants and 57 non-SMU participants (69 men, 135 women). All participants held jobs in a variety of different positions including server/waitress ($N = 17$), sales ($N = 20$), and customer service/cashier ($N = 25$). The average age of SMU participants was 22 ($M = 21.61$, $SD = 3.06$). The average years of work experience was six ($M = 5.57$, $SD = 3.02$), and the average years in the current job was two ($M = 1.83$, $SD = 1.61$). The average age of non-SMU participants in the sample was 39 ($M = 39.19$, $SD = 15.83$). The average years of work experience was 17 ($M = 16.55$, $SD = 15.15$), and the average years in the current job was seven ($M = 7.02$, $SD = 9.61$). Descriptive statistics for gender, and work environment (full-time or part-time), broken down by SMU and non-SMU, are presented in Table 1.

Table 1

Summary of frequencies and percentages for the demographic variables of gender, and work environment, broken down by SMU and non-SMU

Demographics	Frequency		Percentage	
	<u>SMU</u>	<u>non-SMU</u>	<u>SMU</u>	<u>non-SMU</u>
Gender				
Male	41	28	27.9	49.1
Female	106	29	72.1	50.9
Work environment				
Full-time	19	46	12.9	80.7
Part-time	128	11	87.1	19.3

Note. SMU = Saint Mary's University students; non-SMU = non Saint Mary's University participants

Measures

The survey required participants to complete four sections: The DFS-2 (Jackson & Ecklund, 2004), The CFOSQ (Kelloway & Barling, 1994), The GTL (Carless, Wearing, & Mann, 2000), and demographic information (Appendix B).

Dispositional flow scale-2.

The first section consisted of the DFS-2, and asked participants to think about how often they experienced each characteristic during their work and then respond on 5-point scales (1 = *never* to 5 = *always*). The DFS-2 contains nine dimensions (challenge-skill balance, merging of action and awareness, clear goals, unambiguous feedback, concentration on task at hand, sense of control, loss of self-consciousness, transformation of time, autotelic experience) with four items each, totaling 36 items. To allow for the administration in the workplace, items were reworded from an athletic situation to a workplace situation. For example, "It is really clear to me how my performance is going"

was changed to “It is really clear to me how my work is going”. Another example would be “I can tell by the way I am performing how well I am doing” was changed to “I can tell by the way I am working how well I am doing”. Coefficient α for the 36-item DFS-2 was .89. Coefficient α for each of the subscales were as follows: challenge-skill balance was .50, merging of action and awareness was .75, clear goals was .78, unambiguous feedback was .83, concentration on task at hand was .75, sense of control was .79, loss of self-consciousness was .74, transformation of time was .64, and autotelic experience was .83.

Canadian forces occupational stress questionnaire.

The second section consisted of the CFOSQ and asked participants to answer statements dealing with various aspects of their job and respond on 7-point scales (1 = *strongly disagree* to 7 = *strongly agree*). Items specific to the Canadian Forces were not included in the survey. Eight factors of the CFOSQ were administered in the survey (qualitative load, decision making, control, feedback and recognition, coworkers, quantitative load, routinization, skill use), with four items each, totaling 32 items. An additional three factors (role conflict, role clarity, and work scheduling) and four items were erroneously included in the survey. These were excluded from the analysis. The CFOSQ factors were chosen specifically because the CFOSQ has been proven to be a reliable and valid measure (Kelloway & Barling, 1994). Coefficient α for each of the subscales were as follows: qualitative load was .80, decision making was .81, control was

.78, feedback and recognition was .84, coworkers was .86, quantitative load was .73, routinization was .77, and skill use was .84.

Global transformation leadership scale.

The third section of the survey consisted of the GTL scale (Appendix D). The GTL was chosen specifically because it has been proven to be a reliable and valid measure (Carless, Wearing, & Mann, 2000). The GTL asked participants to rate their supervisor in terms of how frequently he or she engaged in the behavior described on 5-point scales (1 = *rarely* or *never* to 5 = *very frequently* or *always*). The GTL is a one factor, seven-item scale. Coefficient α for the 7-item GTL was .94.

Demographic information.

The fourth section consisted of seven items related to demographic information (Appendix B). The items asked for information on gender, age, length of time in the workforce, and whether or not the participant was currently employed. The items also asked questions about the position the person was thinking about when they answered the survey: was it a full- or part-time position, how long they worked in that position, and what their job title was.

Analysis

Using Statistical Package for the Social Sciences (SPSS) Version 17.0 (SPSS, 2008), the data were cleaned by examining minimum and maximum response values, ranges, means, standard deviations, skewness, kurtosis, and standardized scores.

Observations with incorrect data were corrected by cross-referencing with the

questionnaire and outliers were deleted from further analyses. Outliers were defined as observations having a z score of 3.5 or higher. The CFOSQ subfactor of Coworkers had skewness greater than 3.3, however multiple regression is robust to violations of normality (Tabachnick & Fidell, 1996) so no transformations were done. Multivariate outliers were checked using Mahalanobis distance. Outliers were defined as having a Mahalanobis distance over 29. Two outliers were found, however, multiple regression is robust to violations of normality (Tabachnick & Fidell, 1996), and the Cooks distance for each was less than 1, so the cases were not removed.

Results

Simultaneous multiple regression analysis was used to test if the eight subfactors of the CFOSQ (quantitative load, qualitative load, routinization, skill use, control, decision making, feedback and recognition, and coworkers), transformational leadership as measured by the GTL, plus whether the work environment was full-time or part-time (demographic variable included as a control), significantly predicted the nine subfactors of flow as measured by the DFS-2 (challenge-skill balance, merging of action and awareness, clear goals, unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, transformation of time, and autotelic experience) as well as overall flow as measured by the entire DFS-2. Descriptive statistics of the scales are provided in Table 2. Post hoc independent samples t-test was conducted to compare SMU and non-SMU participants on all factors and subfactors. There was a significant difference between SMU ($M = 3.40$, $SD = 1.35$) and non-SMU ($M = 5.38$, $SD = 1.09$)

participants on control; $t(202) = -6.86, p = .046$, and a significant difference between SMU ($M = 3.11, SD = 1.11$) and non-SMU ($M = 3.94, SD = 1.39$) participants on quantitative load; $t(202) = -4.46, p = .039$. All other variables showed no significant differences.

Table 2

Means, Standard Deviations, Correlations, and Reliabilities of DFS-2, CFOSQ, and GTL (including subscales)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. DFS-2	3.6	.38	(.89)							
2. GTL	1.12	1.12	.25	(.94)						
3. Challenge-skill balance	3.83	.53	.65	.18	(.50)					
4. Merging of action awareness	3.62	.58	.57	.10	.23	(.75)				
5. Clear goals	3.9	.63	.74	.17	.38	.41	(.78)			
6. Unambiguous feedback	3.92	.63	.68	.19	.32	.47	.57	(.83)		
7. Concentration on task	3.47	.59	.67	.25	.39	.19	.45	.36	(.75)	
8. Sense of control	3.84	.61	.70	.10	.40	.40	.44	.52	.47	(.79)
9. Loss of self-consciousness	3.02	.76	.43	-.11	.22	.22	.14	.19	.12	.19
10. Transformation of time	3.50	.62	.45	.10	.26	.19	.24	.15	.14	.19
11. Autotelic experience	3.29	.74	.56	.40	.43	.07	.39	.16	.49	.23
12. Qualitative load	4.44	1.42	-.04	.11	.27	-.27	-.05	-.23	.10	-.22
13. Decision making	4.50	1.31	.29	.45	.25	.07	.19	.18	.21	.23
14. Control	4.38	1.42	.20	.27	.17	-.04	.15	.06	.10	.14
15. Feedback and recognition	4.36	1.51	.28	.69	.15	.08	.17	.24	.28	.11
16. Coworkers	5.20	1.27	.26	.45	.16	.13	.24	.29	.10	.24
17. Quantitative load	3.35	1.25	-.12	-.10	.07	-.21	-.11	-.26	-.04	-.17
18. Routinization	3.86	1.39	-.01	.39	.17	-.38	-.01	-.22	.17	-.15
19. Skill use	4.66	1.43	.18	.43	.29	-.14	.10	-.05	.24	.00

Note. Scale reliabilities presented along diagonal in parentheses.

Listwise $n = 186$

$r > .14, p < .05$; $r > .18, p < .01$

Continuation of Table 2

Means, Standard Deviations, Correlations, and Reliabilities of DFS-2, CFOSQ, and GTL (including subscales)

	9	10	11	12	13	14	15	16	17	18	19
1. DFS-2											
2. GTL											
3. Challenge-skill balance											
4. Merging of action awareness											
5. Clear goals											
6. Unambiguous feedback											
7. Concentration on task											
8. Sense of control											
9. Loss of self-consciousness	(.74)										
10. Transformation of time	.07	(.64)									
11. Autotelic experience	.03	.26	(.83)								
12. Qualitative load	-.12	-.04	.33	(.80)							
13. Decision making	-.04	.15*	.34	.15	(.81)						
14. Control	.03	.08	.33	.05	.64	(.78)					
15. Feedback and recognition	-.05	.12	.42	.11	.51	.24	(.84)				
16. Coworkers	-.08	.09	.27	.12	.37	.23	.44	(.89)			
17. Quantitative load	-.08	.07	.10	.46	-.03	.00	-.28	-.10	(.73)		
18. Routinization	-.08	-.02	.41	.59	.29	.18	.35	.26	.26	(.77)	
19. Skill use	-.08	.10	.51	.62	.31	.22	.44	.33	.21	.71	(.84)

Note. Scale reliabilities presented along diagonal in parentheses.

Listwise $n = 186$

$r > .14, p < .05$; $r > .18, p < .01$

Overall Flow

Table 3 below shows the results of the simultaneous multiple regression analysis for overall flow. The results of the regression indicated the ten predictors (eight CFOSQ predictors, one GTL predictor, and the work environment [full time or part time]), explained 17.6% of the variance ($R^2 = .18$, $F(10,183) = 3.90$, $p < .001$) of overall flow. Skill use ($\beta = .30$, $p = .008$), and routinization ($\beta = -.27$, $p = .01$), were significantly related to flow, with 95% CIs [0.02, 0.14], and [-.13, -.02], respectively. Decision making, quantitative load, coworkers, qualitative load, control, feedback and recognition, transformational leadership, and work environment were not significantly related to flow.

Challenge-Skill Balance

Table 3 shows the results of the simultaneous multiple regression analysis for challenge-skill balance. The results of the regression indicated the ten predictors explained 15.4% of the variance ($R^2 = .15$, $F(10,182) = 3.30$, $p = .001$) of challenge-skill balance. Qualitative load ($\beta = .26$, $p = .013$), was significantly related to challenge-skill balance, with 95% CI [.02, .18]. Quantitative load, control, coworkers, skill use, decision making, feedback and recognition, routinization, transformational leadership, and work environment were not significantly related to challenge-skill balance.

Merging of Action and Awareness

Table 3 shows the results of the simultaneous multiple regression analysis for merging of action and awareness. The results of the regression indicated the ten predictors explained 26.6% of the variance ($R^2 = .27$, $F(10,181) = 6.55$, $p < .001$) of

merging of action and awareness. Routinization ($\beta = -.56, p < .001$) and control ($\beta = .21, p = .046$) were significantly related to merging of action and awareness, with 95% CIs [-0.32, -0.16], [0.00, 0.17] respectively. Coworkers, decision making, feedback and recognition, qualitative load, quantitative load, skill use, global transformational leadership, and work environment were not significantly related to merging of action and awareness.

Clear Goals

Table 3 shows the results of the simultaneous multiple regression analysis for clear goals. The results of the regression indicated the ten predictors explained 9.4% of the variance ($R^2 = .09, F(10,183) = 1.88, p = .051$) of clear goals. Coworkers ($\beta = .17, p = .04$) was significantly related to clear goals, with 95% CI [0.00, 0.16]. Control, routinization, decision making, feedback and recognition, qualitative load, quantitative load, skill use, global transformational leadership, and work environment were not significantly related to clear goals.

Unambiguous Feedback

Table 3 shows the results of the simultaneous multiple regression analysis for unambiguous feedback. The results of the regression indicated the ten predictors explained 23.4% of the variance ($R^2 = .23, F(10,183) = 5.58, p < .001$) of unambiguous feedback. Coworkers ($\beta = .25, p = .001$), and routinization ($\beta = -.36, p = .001$), were significantly related to unambiguous feedback, with 95% CIs [0.05, 0.2], [-0.26, -0.07] respectively. Decision making, control, skill use, feedback and recognition, qualitative

load, quantitative load, global transformational leadership, and work environment were not significantly related to unambiguous feedback.

Concentration on the Task at Hand

Table 3 shows the results of the simultaneous multiple regression analysis for concentration on the task at hand. The results of the regression indicated the ten predictors explained 10.3% of the variance ($R^2 = .10$, $F(10,181) = 2.09$, $p = .027$) of concentration on the task at hand. None of the predictor variables were significantly related to concentration on the task at hand.

Sense of Control

Table 3 shows the results of the simultaneous multiple regression analysis for sense of control. The results of the regression indicated the ten predictors explained 19.9% of the variance ($R^2 = .20$, $F(10,183) = 4.54$, $p < .001$) of sense of control. Coworkers ($\beta = .20$, $p = .011$), decision making ($\beta = .29$, $p = .005$), qualitative load ($\beta = -.28$, $p = .006$), routinization ($\beta = -.26$, $p = .012$), and skill use ($\beta = .28$, $p = .013$), were significantly related to sense of control, with 95% CIs [.02, .17], [.04, .23], [-.21, -.04], [-.21, -.03], [.02, .21], respectively. Control, feedback and recognition, quantitative load, global transformational leadership, and work environment were not significantly related to sense of control.

Loss of Self-Consciousness

Table 3 shows the results of the simultaneous multiple regression analysis for loss of self-consciousness. The results of the regression indicated the ten predictors were not significantly related to loss of self-consciousness.

Transformation of Time

Table 3 shows the results of the simultaneous multiple regression analysis for transformation of time. The results of the regression indicated the ten predictors were not significantly related to transformation of time.

Autotelic Experience

Table 3 shows the results of the simultaneous multiple regression analysis for autotelic experience. The results of the regression indicated the ten predictors explained 34.7% of the variance ($R^2 = .35$, $F(10,183) = 9.72$, $p < .001$) of autotelic experience. Control ($\beta = .23$, $p = .005$), feedback and recognition ($\beta = .23$, $p = .017$), and skill use ($\beta = .25$, $p = .012$), were significantly related to autotelic experience, with 95% CIs [.04, .20], [.02, .21], [.03, .23] respectively. Coworkers, decision making, quantitative load, qualitative load, routinization, global transformational leadership, and work environment were not significantly related to autotelic experience.

Table 3

Summary of Multiple Regression Analysis for Flow

Variable	Overall flow		Challenge-skill balance		Merging of action and awareness		Clear goals		Unambiguous feedback	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Work environment	.07	[-0.07, 0.18]	.03	[-0.15, 0.22]	.06	[-0.11, 0.27]	.07	[-0.13, 0.31]	.01	[-0.19, 0.22]
Qualitative load	-.06	[-0.07, 0.04]	.26*	[0.02, 0.18]	-.06	[-0.1, 0.06]	-.03	[-0.11, 0.08]	-.09	[-0.13, 0.05]
Decision making	.17	[-0.01, 0.11]	.17	[-0.01, 0.16]	.17	[-0.01, 0.16]	.11	[-0.05, 0.16]	.15	[-0.02, 0.17]
Control	.03	[-0.04, 0.06]	.04	[-0.06, 0.08]	-.14	[-0.13, 0.01]	.06	[-0.06, 0.11]	-.09	[-0.12, 0.04]
Feedback and recognition	.07	[-0.04, 0.07]	-.09	[-0.11, 0.05]	-.04	[-0.1, 0.06]	-.03	[-0.1, 0.08]	.07	[-0.06, 0.12]
Coworkers	.11	[-0.01, 0.08]	.02	[-0.06, 0.08]	.11	[-0.02, 0.12]	.17*	[0.00, 0.16]	.25**	[0.05, 0.2]
Quantitative load	-.05	[-0.07, 0.04]	-.07	[-0.11, 0.04]	-.08	[-0.11, 0.04]	-.04	[-0.11, 0.07]	-.10	[-0.14, 0.03]
Routinization	-.27**	[-0.13, -0.02]	-.16	[-0.14, 0.02]	-.56**	[-0.32, -0.16]	-.14	[-0.16, 0.04]	-.35**	[-0.26, -0.07]
Skill use	.30**	[0.02, 0.14]	.21	[-0.01, 0.16]	.21*	[0.00, 0.17]	.15	[-0.03, 0.17]	.14	[-0.03, 0.16]
Global transformational leadership	.05	[-0.05, 0.09]	.08	[-0.06, 0.13]	.16	[-0.01, 0.18]	.04	[-0.09, 0.14]	.07	[-0.07, 0.15]

Note. $N = 204$. CI = confidence interval.

* $p < .05$. ** $p < .01$.

Continuation of Table 3

Summary of Multiple Regression Analysis for Flow

Variable	Concentration on task at hand		Sense of control		Loss of self- consciousness		Transformation of time		Autotelic experience	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Work environment	.03	[-0.16, 0.26]	.03	[-0.17, 0.24]	-.01	[-0.29, 0.27]	.12	[-0.06, 0.38]	.02	[-0.18, 0.26]
Qualitative load	.01	[-0.08, 0.09]	-.28**	[-0.21, -0.04]	-.11	[-0.18, 0.06]	-.15	[-0.16, 0.03]	.11	[-0.04, 0.15]
Decision making	.11	[-0.05, 0.15]	.29**	[0.04, 0.23]	-.05	[-0.16, 0.1]	.10	[-0.05, 0.15]	-.08	[-0.15, 0.06]
Control	-.02	[-0.09, 0.07]	-.06	[-0.1, 0.05]	.11	[-0.05, 0.16]	-.01	[-0.09, 0.08]	.23**	[0.04, 0.2]
Feedback and recognition	.12	[-0.04, 0.13]	-.10	[-0.13, 0.05]	.07	[-0.08, 0.15]	.12	[-0.04, 0.14]	.23*	[0.02, 0.21]
Coworkers	-.09	[-0.11, 0.04]	.20*	[0.02, 0.17]	-.06	[-0.13, 0.06]	.00	[-0.08, 0.08]	.00	[-0.08, 0.08]
Quantitative load	-.03	[-0.1, 0.07]	-.02	[-0.09, 0.07]	-.07	[-0.15, 0.07]	.14	[-0.02, 0.16]	.04	[-0.07, 0.11]
Routinization	-.01	[-0.1, 0.09]	-.26*	[-0.21, -0.03]	.02	[-0.11, 0.14]	-.13	[-0.16, 0.04]	.01	[-0.09, 0.1]
Skill use	.16	[-0.03, 0.16]	.28*	[0.02, 0.21]	.03	[-0.11, 0.14]	.19	[-0.02, 0.18]	.25*	[0.03, 0.23]
Global transformational leadership	.10	[-0.06, 0.16]	-.02	[-0.12, 0.1]	-.15	[-0.25, 0.04]	-.02	[-0.12, 0.11]	.09	[-0.06, 0.17]

Note. $N = 204$. CI = confidence interval.

* $p < .05$. ** $p < .01$.

Discussion

The aim of the study was to explore whether job characteristics as measured by the CFOSQ and transformational leadership as measured by the GTL are related to flow and its nine dimensions as measured by the DFS-2. Specifically, the study looked at flow in a work context. The current research proposed that the job characteristics of control, coworkers, decision making, feedback and recognition, skill use, in addition to transformational leadership would have be positively related to flow and its nine dimensions, while qualitative load, quantitative load, and routinization would be negatively related to flow and its nine dimensions.

It is important to note that the Dispositional Flow Scale-2 is a slightly misleading title for the measure. The DFS-2 does not measure flow as a disposition, but rather measures situational experiences within a domain. The FSS-2 measures situational experiences immediately following a specific flow event. The instructions for the DFS-2 state “Please answer the following questions in relation to your experience in your chosen activity”, while the FSS-2 instructions state “Please answer the following questions in relation to your experience in the event or activity you have just completed.” Therefore the DFS-2 can be administered at any time, while the FSS-2 was designed to be administered immediately following the experience.

Results from the study partially support the hypotheses, since most of the factors had a significant relationship with flow or at least some of its nine dimensions, in the direction that was expected. However, none of the predictors had a significant

relationship all criteria, which may be due to limitations in sample and measures discussed below. Specifically, results indicated that routinization and skill use have the most consistent relationship with flow. Routinization has a significant negative relationship with overall flow, as well as the dimensions of merging of action and awareness, unambiguous feedback, and sense of control. That is, as the level of routinization increases, flow decreases. Skill use has a significant positive relationship with overall flow, and the dimensions of merging of action and awareness, sense of control and unambiguous feedback dimensions. In other words, the more an individual has the opportunity to put their work skills to use, the greater the absorption into the task, sense of control, immediate understanding of how they are performing, and flow they experience. Coworkers have a significant positive relationship with clear goals, unambiguous feedback, and sense of control, which means that as the feeling of cohesion and teamwork increases, so does the employee understanding of what they are supposed to do, how they are performing and feeling of being in control of the task. Qualitative load has a significant negative relationship with challenge-skill balance and sense of control, which means that the greater the perception is that employees do not have the proper training to complete a task, the lower the perception of the employee that he or she can complete the task, and the lower the perception of being in control of the task. Control has a significant positive relationship with autotelic experience, which means that if an employee has control over their time and work schedule, they will feel like they are doing the job for its own sake. Decision making has a significant positive relationship

with sense of control, so the greater the influence over how the work gets done, the greater the feeling of being in control of the task. Finally, Feedback and recognition has a significant positive relationship with autotelic experience, which means that as the recognition for a job well done increases, so does the feeling of doing the job for its own sake. Quantitative load, transformational leadership, and work environment (full time/part time) did not have a significant relationship with flow or the nine dimensions. The expectation was that quantitative load and transformational leadership would significant relationship with flow, and the actual results may be due to limitations in sample and measurement discussed below. There was a significant difference between SMU and non-SMU participants on the variables of control and quantitative load. However, this result may be due to the small sample size of the non-SMU population.

The significant negative relationship of routinization is important because in a work context it is clear that not challenging employees and having them do the same thing over and over is a significant obstacle to achieving flow. Specifically, routinization stops employees from feeling like they are absorbed into what they are doing, interferes with their ability to perceive how they are performing, and not surprisingly hampers their perception of control over the situation. Conversely, creating an environment that allows employees to utilize their skills and abilities is conducive to flow. This helps employees feel like they are totally absorbed into what they are doing, in control, and enhances their ability to perceive how they are performing. Facilitating flow is important because people who describe being in a flow state often perform at very high levels, report greater

enjoyment of the task, and push themselves to rise up to the challenge of the task (Csikszentmihalyi, 1990, 2003).

It is not surprising that the present study showed that when employees are able to make their own decisions, this helps them feel like they are in control. When employees feel that they have to complete tasks for which they have very little training or resources, this makes them feel that the challenge of the task is too great, and that they have no control over the situation. On the other hand, when employees have supportive coworkers who work together as a cohesive unit, this makes them feel like they are in control, and also gives employees a clarity of purpose and an immediate understanding of how they are performing the task at hand. Finally, when employees are recognized for doing their job well, this helps them feel like they are doing the job for its own sake.

The findings that routinization (negative relationship) and skill use (positive relationship) have the most consistent relationship with the flow subscales supports Fullagar and Kelloway's (2009) finding that skill variety from the JCM contributes towards predicting flow. Routinization is defined by a lack of challenge, doing the same thing over and over - "Nothing ever changes in my job" and skill use is defined as allowing for the use of skills and abilities - "My job requires the use of many skills". These are both similar to Skill Variety, which is defined as the degree to which the job requires different activities and skills to carry out the task.

These results are also consistent with Bakker's (2008) findings that opportunities for self-growth were positively related to absorption, work enjoyment, and intrinsic work

motivation, since being able to grow in one's job is related to having the opportunity to use many different skills (skill use), and is the opposite of doing the same thing over and over (routinization). The present study adds to the research on flow in the workplace by demonstrating the clear negative relationship between a monotonous job and flow and its dimensions.

Bakker (2005), Bakker, Demerouti and Euwema (2005), Bakker (2008), and Fullagar and Kelloway (2009) confirmed the importance of autonomy in increasing the possibility of flow. The current research further supports the importance of autonomy, since routinization conflicts with autonomy. In other words, it is crucial for organization to find ways to empower their employees, and to ensure that the job has variety and room for growth and learning.

Although the results showed all the job characteristics except for quantitative load having some kind of relationship with flow, none of the factors had a significant relationship with flow and all of the nine dimensions. This may either be due to the fact that a nine dimension flow model is too complex for a work context, or that perhaps some dimensions are more important than others. Bakker's (2008) review of the flow literature led him to develop a three dimension model (work enjoyment, absorption, and intrinsic work motivation) for the Work reLated Flow inventory (WOLF).

One surprising finding from the current study is that transformational leadership did not have a significant relationship with flow or any of the nine dimensions. Previous studies have demonstrated the positive impact of transformational leadership on certain

aspects of subordinate motivation and performance (Barling, Weber, & Kelloway, 1996; Masi & Cooke, 2000). Therefore, it was expected that transformational leadership would have a significant positive relationship with flow, though this turned out not to be the case. This is possibly due to the limitations of the student sample. It is possible that the participants in the current study did not come into contact with transformational leaders in their work environment. Transformational leadership is based on the leader's personality, traits, and ability to lead by example. The transactional leadership model of a give and take between employee and supervisor is more common in fields that employ students (e.g. server, sales, and customer service). One of the main definitions of flow according to Csikszentmihalyi (1990) is when the skill of the individual and the challenge of the task meet at the highest level. This is possible even in service and retail jobs. For example, a pizza server can experience flow if there is a big rush of customers (challenge), but the server knows that if they push themselves (skill), they can make enough pizzas to satisfy the demand. The challenge and the skill must meet at the highest level within a task in order for flow to occur, regardless of the complexity of the task.

There was also an issue of high collinearity between the GTL and the eight CFOSQ job characteristics, and this may have obscured the effect of transformational leadership on flow and the nine dimensions. Finally, leadership has been identified as the "root cause" of many job conditions (Kelloway, Sivathan, Francis, & Barling, 2005), so another explanation is that the job characteristics mediate the relationship between transformational leadership and flow.

Limitations

One limitation of the present study is the cross-sectional, self-report design relating job characteristics and transformational leadership to flow. Taking self-report measurements pre, during, and post flow would create a baseline for comparison, instead of having a one-time snapshot. Another limitation is that Csikszentmihalyi's (1990) research, upon which the DFS-2 is based, used the Experience Sampling Method (ESM). This approach was used by Fullagar and Kelloway (2009), where participants were given a Personal Digital Assistant (PDA) to record information at specific intervals. In contrast, participants in the current study were given questionnaires in order to measure flow retrospectively. While this method is used in many different areas of research, including studies of subjective well-being such as burnout, depression, work-engagement, etc, it may have impacted the results by requiring the participant to retrospectively think about and answer the questionnaire, as opposed to responding during or immediately after the time or event at work. In addition, the present research was largely comprised of a student sample that was given a bonus point for completing the questionnaire. This is a limitation in the generalizability of the study. Although the student participants were all working at the time of the study, the fact that they were students as well limits the generalizability, in addition to the fact that their motivation for participating was to receive the bonus point. A final limitation is that the present study was comprised of participants across many fields and disciplines, as opposed to a clear group of employees. The results may be at least partly due to common method variance (Podsakoff,

MacKenzie, Lee, & Podsakoff, 2003), and therefore future studies should use other sources of information.

Future Research

There are a number of limitations to the present study that can be addressed by future research. Although Csikszentmihalyi (1990) stated that there are nine flow dimensions, four of the dimensions did not have a significant relationship with the individual job characteristics, and two dimensions were significantly related to one predictor. In addition, transformational leadership did not have a significant relationship with flow. Future research should try and examine the relationship between the job characteristics and transformational leadership, and the nine-dimension flow model, across different disciplines (e.g. a high tech company, an architectural design firm, and an advertising agency) in order to try and replicate the results of the present study. A replication of non-significance would build upon the question of the relationship between transformational leadership and flow raised in the current study. Future research should also further explore the possibility that the relationship between leadership and flow is mediated by the job characteristics, since leadership has been shown to be a “root cause” of various job characteristics (Kelloway, Sivanthan, Francis, & Barling, 2005). A newer scale developed by Bakker (2008) known as the WOLF, has three dimensions. Future research on flow in the workplace should use both the WOLF and the DFS-2, in order to compare the results of the nine dimension flow model with a more simplified three dimension flow model. The research should also combine the cross sectional self-report

method with the Experience Sampling Method. This comparison within the same study will help address whether the reporting method impacts the results.

Conclusions / Organizational Applications

The results from the current study have several important implications for organizations. In order to facilitate flow, organizations should create jobs that do not involve doing the same thing over and over, that allow employees to utilize their skills and abilities, and that foster an environment of teamwork and support. Employees need to be empowered to make their own decisions, and receive timely recognition for a job well done.

The results partially support the theory that job characteristics and transformational leadership are related to flow. Specifically, the study demonstrated that routinization and skill use are related to several dimensions of flow, but transformational leadership was not significantly related to flow. Significantly, the present study was one of the first to look at the relationship between job characteristics and transformational leadership, and the nine dimensions of flow as defined by Csikszentmihalyi (1990), in a work context. As previously mentioned, four of the dimensions were not significantly related to the individual job characteristics plus transformation leadership, and two dimensions were only significantly related to one job characteristic. Therefore, one important outcome of the present research is that a nine dimension flow model may be overly complex in a work context.

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Appendix A: Email Request for Survey Participation

Hello,

I am currently a Master's student at Saint Mary's University in Halifax, Nova Scotia. For my thesis, I am conducting a study on experiences in the workplace. The study should take approximately 10-15 minutes to complete. Thank you very much for your participation. Please click on the link below to begin:

<http://www.zoomerang.com/survey.zgi?p=WEB2243JTAR3YA>

Thank you,

Jonathan Deitcher
M.Sc. Candidate in Applied Psychology
Saint Mary's University
Halifax, Nova Scotia

Appendix B: Demographic Information

We ask you to provide the following demographic information to help us describe the people participating in this study. Be assured that all information will not be used to identify you. Please read each statement and indicate your response in the space provided.

91. Gender: Male _____ Female _____

92. Age: _____

93. How long have you been in the workforce? Years _____ + Months _____

94. Are you currently working? Yes _____ No _____

If you answered YES to the previous question, please answer the following questions below. If you answered NO, please skip to question 98.

95. Are you currently working full-time _____ or part time _____?

96. How long have you been working in your current job:

Years _____ + Months _____

97. What is your current job title? _____

If you answered NO to question 94, please continue here.

For the job that you were thinking of when you filled out this survey:

98. Were you working **full-time** _____ or **part time** _____?

99. How long were you working in that job: Years _____ + Months _____

100. What was your job title? _____



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