International Journal of Psychological Studies

Editorial Board

Contents

The Phenomenon of Generational Cohort Differences in Life Satisfaction Reports

Maria Clara Kreis[1] & Debra W. Moore[2]

[1] Thriving in Ministry, Catholic Theological Union in Chicago, IL, USA

[2] Program Evaluation and Research Unit, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA, USA

Correspondence: Maria Clara Kreis, Thriving in Ministry, Catholic Theological Union in Chicago, IL, USA.

Abstract

The subjective well-being within society continues to be a focus in psychology, especially during the COVID 19 pandemic. The Life Satisfaction Scale for Apostolic Women Religious (LSSAWR) is designed to assess, across generations and congregations, the subjective well-being of Catholic Sisters worldwide. Sisters completing the LSSAWR online get a personal score report, and each congregation receives their LSSAWR scores in a Congregational Report (CR). The anonymous and confidential nature of gathering and reporting results, allows for honest feedback from Sisters about the current state of their community, and it provides insights for the potential planning of their preferred future. Additionally, CRs offer generational cohort comparisons across and within the domains that are reflective of various aspects as related to religious life. A multilevel model to account for clustering of Sisters within congregations was used to examine whether generational differences existed in LSSAWR scores. Results revealed significantly higher scores among elder cohorts as compared to younger cohorts but some differences in patterns among domain scores.

Keywords: commitment, ministry satisfaction, life satisfaction reports, women religious, age, generational cohort differences, well-being, meaning-making framework

1. Introduction

1.1 Introduce the Problem

Recent attention within the field of psychology is given to the subjective and religious/spiritual well-being of individuals and society, especially during the COVID-19 pandemic and its influence on public life (Bloom, 2019; Currie & Rossin-Slater, 2014; Diener, Oishi & Tay, 2018; Joshanloo, 2019; Krok, Zarzycka, & Telka, 2021; Kuhfeld, Soland, Tarasawa, Johnson, Ruzek, & Liu, 2020; Singh & Singh, 2020; Vieten & Lukoff, 2022; Zarzycka & Zietek, 2019). As such, psychologists are particularly interested in the impact that COVID-19 has on people's mental health, life satisfaction, and on the workforce, and how it might change the future work environment (Carnevale & Hatak, 2020; Dobrakowski, Skalski, Surzykiewicz, Muszynska, & Konaszewski, 2021; Sonnentag, 2015; Xiong, Lipsitz, Nasri, Lui, Gill, Phan, Chen-Li, Iacobucci, Ho, Majeed, & McIntyre, 2020). Prior research has identified the importance of meaning making and its influence on individuals' perceptions of their lives when overcoming adverse life circumstances. In fact, Park's (2010) research led to the design of an "integrated model of meaning-making (p. 257)" as she explored the literature regarding peoples' overall meaning-making abilities, and their attempts to adjust to stressful life events. Particularly, Park (2010) identified that people's global meaning-making comprises their "beliefs, goals, and subjective feelings," and that "relationships, work, religion, knowledge, and achievement" are the most frequently described global goals (p. 258)." Park's (2010) findings are supported in other research, in which the importance of meaning-making, and/or the desire for meaningful ministry/service experiences has emerged among study samples of women religious, students, and adolescents (Duffy & Sedlacek, 2010; Kreis & Diaz, 2021; Krok et al., 2021; Vieten & Lukoff, 2022). Additionally, one can recognize Park's (2010) tenets in the content of the 50 items of the Life Satisfaction Scale for Apostolic Women Religious (LSSAWR), designed particularly for this population (Kreis, 2010; 2012). Of course, there are many other psychological assessments/instruments designed to assess these aforementioned life aspects separately within the general population (Diener, Emmons, Larsen, & Griffin, 1985; Gordon, 2017; Paloutzian & Ellison, 1982; Schumm, Nichols, Sheetman, & Grigsby, 1983; Vieten & Lukoff, 2022). However, the LSSAWR (Kreis, 2010; 2012), is a unique instrument. It offers the opportunity to assess concurrently these

varied human life aspects with only one instrument among Roman Catholic apostolic women religious (aka: Sisters). As such, the LSSAWR has the ability to assess a Sister's life, work, spiritual, and commitment satisfaction levels individually as well as communally within one and/or many congregations of apostolic women religious worldwide (Maria Clara Kreis, March 27, 2018; Kreis, Crammond, & Reynolds, 2018). In addition, the LSSAWR can be used to assess life satisfaction across the lifespan of women religious (Erikson, 1959; Kreis, 2010). In fact, research on the LSSAWR and other research have shown that life satisfaction increases with age (Angelini, Cavapozzi, Corazzini, & Papagnella, 2012; Kreis, 2012).

Currently, the LSSAWR (including the Manual) is available in English, Spanish, and German (Kreis, Crammond, & Reynolds, 2018; 2019; 2019), and has been normed to three different cohorts, namely the Silent, Boomer, and Generation X (Strauss & Howe, 1991) generations. Furthermore, the LSSAWR has been used by Sisters located on every continent and in many countries of the world (Maria Clara Kreis, March 27, 2018). These apostolic or active women religious are committed to a life of private and communal prayer and community living, which inspires and sustains their social justice outreach to those most vulnerable and on the margins of society and world (Kreis & Diaz, 2021). However, since the 1960s, there has been a steep membership decline, and therefore Sisters are seeking new scenarios to transition their lives inter- (generationally/culturally/congregationally) into a viable future (Gittins, 2015; Hereford, 2019; O'Murchú, 2016).

1.2 Background

Historically and worldwide, apostolic women religious have been able to afford their living and ministries (charitable and corporal works of mercy) through their continuous intergenerational membership (Hereford, 2014). Many congregations within the Global North have offered their altruistic services for more than a century (Ebaugh, Lorence, & Saltzman Chafetz, 1996). Nevertheless, the steep membership decline over five decades was a result of huge numbers of women who have left religious life, followed by a lack of new entrants. Smaller new entrant cohorts initially replaced large entrant cohorts, and over the last two to three decades, a majority of U.S. women religious congregations did not have any new entrants (Kreis, 2010). A few congregations, who belong to the Leadership Conference of Women Religious, tend to have one entrant per year or every other year. Overall, this trend has led to a membership composition, in which the older age cohorts outnumber the new and/or younger members within congregations of the Global North (including the U.S.).

Thus, it will be important to find avenues, in which the hopes and dreams of each generational cohort can be shared, within and among the women religious congregations who are currently undergoing major transitions in the various aspects of their lives (Kreis, 2020; Kreis & Crammond, 2019; Kreis, Crammond, & Lunz, 2016). The mere fact of membership decline has and continues to bring about changes that are affecting their life form and philanthropic mission to be of service to those marginalized in society. Many communities in the Global North already had to divest themselves of property, buildings, and long established coperate ministries. It will be crucial for these women to engage in honest, courageous, and compassionate conversations as they listen to each other's visions for their preferred future, particularly those aspirations that are percolating in the hearts and minds of the younger age cohorts (Dunn, 2017; Kreis, 2020; Kreis & Crammond, 2019).

1.3 Uses of the LSSAWR

As part of the funding for the International LSSAWR Project, Congregational Reports (CRs) were provided to the leaders of participating congregations worldwide (Maria Clara Kreis, November 5, 2019). Congregations of women religious have used the LSSAWR results from their CR for strategic planning. Alternatively, Sisters have used their own LSSAWR scores as a reflective tool to guide personal, communal involvement, professional, and spiritual development across the lifespan (Kreis et al., 2018). In either case, the anonymous and confidential process offered the opportunity for members of different age cohorts to express honestly their personal and communal assessment as related to the current state of their congregation, and it also offered insights for the potential planning as they seek their preferred future. (Campbell, Campbell, Siedor, & Twenge, 2015; Maria Clara Kreis, November 5, 2019). In addition, expanding the LSSAWR to include two additional language versions allowed for the participation of congregations from varied ethnic/racial backgrounds and age cohorts worldwide (Kreis et al., 2018; 2019; 2019).

As the oldest and largest age cohort of the Silent Generation is approaching their last stage in life, it will be the responsibility, foresight, and vision of the younger age cohorts to plan for their desired and viable future (Campbell et al., 2015; Kreis & Bardwell, 2011; Kreis et al., 2016). The CR generated by the LSSAWR research team (https://ctu.edu/thriving-in-ministry) present the aggregated and intergenerational scores of the membership of one congregation on the core elements of religious life (Kreis, 2010; 2012). The confidential and aggregated results and score interpretations presented in a CR can assist the membership in identifying and developing goals

and objectives as they seek a viable future. Several Congregations of women religious who used the results presented in their CR as a baseline measure for developing their strategic plan, decided to repeat their participation in the International LSSAWR Project, which resulted in a second CR (Maria Clara Kreis, November 5, 2019). The second CR was used to evaluate their congregation's change and progress in fulfilling their strategic plan. With future funding, it would be preferable to offer the congregational membership three CRs by establishing a baseline, pre-and post-assessments of transformational growth over a period of three years.

While the LSSAWR can be used as one criterion to inform a congregation's mission and the care of its members across the life span, the instrument can also be used as a helpful tool for Sisters in transition (e.g., initial/ongoing formation, change in ministry, local living, elder care, etc.). In fact, Sisters who have completed the anonymous and confidential survey received both their total score and scores on each of the five domains on the LSSAWR. Scores were available online once the survey was completed. For example, a Sister's total average score might be at 4.22 out of a maximum of 5 (high satisfaction), which represents her general level of satisfaction with religious life. Domain scores provide information about a Sister's satisfaction with specific aspects of religious life. For example, a "Direction of the Congregation" domain score reflects a Sister's satisfaction on issues specific to their congregation, such as direction, charism, leadership, and mission. Finally, women discerning their call to religious life and the formation personnel can use this tool to assist the discernment process at the various stages of formation.

1.3.1 Qualitative Feedback on the Use of Congregational Reports (CRs)

Worldwide the leadership teams of religious congregations have reported on the positive impact that the LSSAWR had on the members individually (individual scores) and as a congregation (aggregated scores) (Maria Clara Kreis, November 5, 2019). Actually, the leadership of women religious congregations felt that the CR offered a time and cost-effective assessment on the overall satisfaction levels of their members as well as across the five sub dimensions of religious life (Maria Clara Kreis, March 27, 2018). They also appreciated that it offered a simultaneous and confidential voice of all current age cohort groups within religious life (Maria Clara Kreis, November 5, 2019). In fact, the leadership of congregations expressed a great interest not only in the overall satisfaction levels of their membership but also in the information on any potential age cohort differences across and within the five sub dimensions of the LSSAWR (Maria Clara Kreis, November 5, 2019; Kreis et al., 2018).

Women religious also reported the successful use of the CR in the development of a comprehensive and directional strategic plan for their preferred future (Maria Clara Kreis, November 5, 2019). Unfortunately, discontinued grant funds hindered the ability to offer women religious congregations additional follow up assessments. However, leadership of congregations, who did receive the two CRs, reported on the benefits of the feedback on the varied trends, changes, and transformation that took place within the time span between the first and second reports.

1.4 Purpose of the Current Study

The purpose of the current study was to determine how generational cohorts impact overall life satisfaction and satisfaction with core aspects of religious life (e.g., community prayer and living, and ministry) among women religious as measured by the LSSAWR.

2. Method

2.1 The Instrument

The LSSAWR was developed to measure life satisfaction among women religious (Kreis, 2010; 2012). Briefly, the LSSAWR and its Manual is the first instrument designed to assess satisfaction with religious life of Roman Catholic apostolic women religious. It is available in three languages: English, Spanish, and German (Kreis et al., 2018; 2019; 2019). The scale consists of 50 multiple-choice items for which respondents use a 5-point Likert scale ((1) "very dissatisfied" to (5) "very satisfied") to rate their satisfaction with various aspects of religious life and its charism/mission. The 50-item scale assesses life and ministry satisfaction among women religious across five established domains: Congregational Character, Individual Well-Being, Membership Viability, Holistic Growth and Commitment, and Inter-Relationships. Details concerning item development for the scale are described in Kreis (2010). Additionally, psychometric analyses supporting the factor structure as well as test-retest reliability are described in Kreis (2010), Kreis (2012), and Kreis et al. (2018). Finally, a measurement invariance (MI) study that provides evidence for comparison of mean scores across domains, as well as total score, among generational cohorts is described in Moore and Kreis (2021).

The Examiner's Manual for the LSSAWR (Kreis et al., 2018) provides descriptive information concerning the five dimensions, which are summarized here for convenience. Congregational Character items assess satisfaction on issues specific to a sister's congregation. These include the direction, charism, mission, and leadership. The Individual Well-Being items assess awareness of personal characteristics and general suitability for religious life. Membership Viability items assess satisfaction with personal and communal commitment toward initial and lifelong formation. The Holistic Growth and Commitment items assess satisfaction with personal and professional growth and commitment to religious life. Finally, the Inter-Relationships and Individual Well-Being items assess a Sister's satisfaction with personal and peer friendships within her community (internal) and friends, family and coworker relationships (external). Items within each domain are summed to create a total score for that dimension. Then, individual dimension scores are combined to calculate an overall satisfaction score.

The number of items on each dimension differ, therefore, the maximum possible score for each dimension differs; Total Score (max = 250), Congregational Character (max = 65), Individual Well-Being (max = 45), Membership Viability (max = 45), Holistic Growth and Commitment (max = 65), and Inter-Relationships (max = 30). Results from the MI study by Moore and Kreis (2021) revealed that the Individual Well-Being and Inter-Relationships dimensions were not statistically distinguishable for the Silent generation. Therefore, when comparing generational cohorts, the two dimensions were combined. This resulted in a maximum possible score of 75 for this combined 'sense of belonging and relationships' dimension.

2.2 Sample

LSSAWR data was collected in three waves across 13 years. The first wave of data collection (2008-2009) was completed in the United States and provided the initial data for the preliminary psychometric analysis. The second wave of data collection (2016-2020) was begun with the goal of extending the LSSAWR to a younger, and more international group of women religious worldwide. Participation in this International LSSAWR Project was solicited through a wide variety of organizations, conferences, and other entities, which support women religious. The word of mouth, by participants and leadership teams of Roman Catholic women's religious congregations worldwide also influenced an increased participation. The third wave of data collection was attempted in 2021 with the goal of providing evidence for a gender-inclusive version of the survey (e.g.: replacing her/she with they/theirs) to expand use of the LSSAWR to men religious (https://ctu.edu/thriving-in-ministry).

Responses from the second wave of data collection (2016-2020), a study sample described in detail in Moore and Kreis (2021) were used for this current study. Participants encompassed a sample of international Catholic Sisters known as *active women religious*. Active women religious are women religious who through their vows of poverty, chastity, and obedience promise a permanent commitment to God within their respective congregations. Women religious are committed to apostolic and charitable works and follow the specific constitution or rule of life of their congregations. (Glazier & Hellwig, 2004). Overall, this mostly self-selected sample of Roman Catholic women religious from the Global North and South is homogenous concerning their chosen lifestyle but not necessarily based on factors such as socioeconomic status, educational, occupational, and racial/ethnic backgrounds.

Some participants reported anecdotally that they took the survey more than once to see if their satisfaction level changed over time. Other participants noted they experienced technological problems while taking the survey and much of their data was missing. Thus, prior to analysis, the data was examined and cleaned. This process included the removal of duplicate cases (i.e., from the same individual) or cases with significant missing data. Two cases were considered duplicates, if responses came from the same IP address and had the same demographic information (e.g., year of birth, year entered religious life, year of first commitment, etc.). In these instances, responses were retained for the first time the participant completed the survey. Using this process, 105 cases were removed as duplicates and another 125 cases were removed due to significant missing data. This resulted in a potential sample of 1890 participants.

2.3 Variables

Along with responses to the items for each dimension, the scale also collected personal descriptive information for each participant such as date of birth, years in religious life, race/ethnicity, level of education, and survey language. To create the variable of interest in this study, generational cohort based on the generation theory (Campbell et al., 2015; Howe & Strauss, 2007; Strauss & Howe, 1991) was applied and participants were divided into four generational cohorts based on their reported year of birth; Silent (1925-1942), Boomer (1943-1960), Generation X (1961-1981), and Millennial (1982-2004).

Prior research has demonstrated age and generational differences in life satisfaction within religious life (Kreis, 2010; 2012; Kreis & Bardwell, 2011; Kreis et al., 2016; Kreis et al., 2018). However, age and generational cohort were interdependent since age was the defining characteristic for generational cohort. Since generational cohort was the focus of this study, age was considered redundant even though it was a significant predictor. Anecdotally, years in religious life emerged as a potential predictor of life satisfaction. However, years in religious life and age were very highly correlated (r = 0.957, p < 0.001) and multicollinearity tests confirmed the redundancy of these two variables when used in the same model. Unfortunately, since the sample did not have many participants who joined religious life at later stages in their lives, the available data did not afford the inclusion of this variable or investigation of this phenomenon.

Additionally, a potential predictor variable was survey language. However, survey language did not emerge as a significant predictor. Related to survey language was ethnicity, which was also investigated as a potential predictor variable. However, the ethnicity categories for the Spanish and English survey versions differed from the ethnicity categories for the German survey version. This was at the request of those who reviewed the German survey prior to administration. Therefore, no consistent ethnicity variable existed for use in the model.

Finally, prior research indicated that elder generational cohorts lagged in obtaining advanced educational degrees. In contrast, younger age cohorts either joined religious life with advanced degrees or were supported during their initial formation period by their congregations in completing advanced educational degrees (Kreis et al., 2016). Therefore, level of education was considered as a covariate, especially as a potential factor to explain any differences observed between younger and elder cohorts. However, this variable was not a significant predictor when included in the model.

2.4 Analysis

Choosing the best method of analysis to answer the research question using the available data required consideration. Because Sister-participants were nested within their congregation, there was the question of accounting for the clustering during the analysis, especially given that congregations did their own recruitment. Hierarchical linear models (HLMs) or multilevel models (MLMs) allow researchers to account for this non-independence of observations and have become increasingly popular in recent years within educational and psychological research (e.g., Huang, 2016; McNeish & Stapleton, 2014; Raudenbush & Bryk, 2002). However, just as with ANOVAs, HLMs and MLMs come with underlying assumptions and violation of these model assumptions can cause bias in estimates and, thus, interpretations (Hox, 2010; Raudenbush & Bryk, 2002).

2.4.1 Model Assumptions

Clustering is important to consider because analysis of variance (ANOVA) and regression models rely on the underlying assumption of independence of observations (Clarke, 2008; Glass & Hopkins, 1996; McCoach & Adelson, 2010). When samples are drawn from clustered data, such as Sisters from congregations, the assumption of independence of observations may be violated due to some shared similarity or influence among those living and/or ministering together compared to a sample drawn from the population at large (Bliese & Hanges, 2004; Clarke, 2008; Cohen, Cohen, West, & Aiken, 2003; Moerbeek, 2004; Raudenbush & Bryk, 2002).

The Interclass Correlation Coefficient (ICC) provides an estimate of the variability due to clusters in the data and, thus, importance of using a model capable of accounting for clustering (Clarke, 2008; Huang, 2016; Raudenbush & Bryk, 2002). Much work was previously done with ICCs and researchers in the past have suggested that ICCs less than 0.10 or 0.05 indicated negligible non-independence and that clustering could be ignored in these cases (e.g., Hayes, 2006; Nezlek, 2008; Thomas & Heck, 2001). For reference, within educational contexts, it has been shown that elementary and secondary schools have an average ICC of roughly 0.22 (Hedges & Hedberg, 2007). However, more recent studies have shown that even small ICCs can indicate substantial dependence of responses that requires accommodation for nesting (Huang, 2018; Snijders & Bosker, 2012). Thus, ICCs were calculated for the total score and each individual domain score from the current data set and ranged from 0.13 to 0.19. These indicated the potential for non-negligible non-independence of observations due to clustering. Therefore, it was determined that congregational clusters needed to be considered during the data analysis.

Sample size for the number of level-2 units (e.g., congregations) and level-1 units (e.g., individual sisters) was considered. Specific guidelines in the literature for sample size are varied and dependent on the focus of the analysis and the parameters of the simulation studies from which they emerge (Bell, Morgan, Schoeneberger, Kromrey, & Ferron, 2014). Current general guidelines suggest a 30/30 configuration (McNeish & Stapleton, 2014). This translates to 30 congregations with 30 sisters each relative to the current study. However, in a comprehensive review of literature, Dedrick, Ferron, Hess, Hogarty, Kromrey, and Lee (2009) found almost

25% of published studies did not follow these guidelines. These authors, as well as others, (e.g., Bell et al., 2014; McNeish & Stapleton, 2014) have noted that the lack of conformity with sample size guidelines may be due to logistic constraints (e.g., financial, limited availability, time). Further, evidence shows that having the requisite number of level-2 units may be more consequential than having the requisite number of level-1 units, within limits (Bell et al., 2014).

To draw the final sample for this study, as many of the parameters outlined above were addressed. Ultimately, a final sample of 1701 Sisters affiliated with 33 congregations from the second wave of data collection was used for the study. Sisters per congregation ranged from 22 to 231. Not all congregations had all four generational cohorts represented within the sample from their congregation. This is particularly true of the Millennial generation. In addition to some congregations lacking a similar proportion of participants from the cohort, the Millennial age cohort does not include the full age range representation because those born between 2002-2004 would not be old enough to consider the life commitment to religious life (Table 1).

Table 1. Age range and number of respondents for each cohort in final study sample

Generation	n	Birth Years	Age range in 2016	Age range in 2020	Age range during data collection window
Silent	649	1925-1942	74-92	78-95	74-95
Boomer	598	1943-1960	56-73	60-77	56-77
Generation X	326	1961-1981	35-55	39-59	35-59
Millennial	128	1982-2004	[12]-34	[16]-38	[12]-38

[] denotes age not yet eligible for commitment to religious life

Finally, MLMs, like ANOVAs have the assumption of homogeneity of variance and the assumption of normality of the dependent variable (Dedrick et al., 2009). While the model is fairly robust to violations of normality, if the assumption of homogeneity of variance is violated, estimates can be biased (Dedrick et al., 2009). However, newer versions of most statistical programs allow the user to perform ANOVAs and MLMs using various types of covariance matrices (e.g., unstructured, auto-regressive), and type of sum scores, to accommodate this violation (Kincaid, 2012). While each alternate type of covariance structure does require additional degrees of freedom, this is not an issue when sample sizes are large enough. Thus, a test for the assumption of homogeneity of variance was performed for total life satisfaction score as well as each individual domain score. The Congregational Character domain scores and the Inter-Relationships and Individual Well-Being domain scores both violated the assumption of homogeneity of variance. Therefore, all analyses were performed using an unstructured covariance matrix to accommodate the violation and to maintain analytic consistency across all models.

3. Results

Results of the multilevel model for overall life satisfaction score followed by results for each domain score are presented first; then results are summarized. After summarization, a descriptive presentation of average item ratings is presented to illuminate patterns in ratings between generational cohorts. Estimated means and standard errors for total score and all domain scores are included in Appendix A.

3.1 Total Life Satisfaction Score

The total life satisfaction score among generational cohorts was significantly different (F (3, 1697) = 47.69, p < 0.001). Bonferroni post hoc adjustments were made for multi-comparison of main effects for generational cohort and showed the Silent generation had significantly higher overall life satisfaction scores compared to the Boomer cohort (mean diff = 10.39, p < 0.001), the Generation X cohort (mean diff = 16.12, p < 0.001), and the Millennial cohort (mean diff = 17.35, p < 0.001). Additionally, the Boomer cohort had significantly higher overall life satisfaction scores compared to the Generation X cohort (mean diff = 5.73, p = 0.002) and the Millennial cohort (mean diff = 6.96, p = 0.013). However, overall life satisfaction scores for the Generation X cohort were not significantly different from the Millennial cohort scores.

3.2 Domain Scores

Congregational Character domain scores among generation cohorts were also significantly different (F (3, 1697) = 67.84, p < 0.001). Bonferroni post hoc adjustments for multi-comparison of main effects were performed and revealed that the Silent generation had significantly higher Congregational Character domain scores compared to the Boomer cohort (mean diff = 4.10, p < 0.001), the Generation X cohort (mean diff = 6.34, p < 0.001), and the

Millennial cohort (mean diff = 6.66, p < 0.001). Additionally, the Boomer cohort had significantly higher scores compared to the Generation X cohort (mean diff = 2.24, p < 0.001) and the Millennial cohort (mean diff = 2.55, p = 0.004). Again, the Generation X cohort scores were not significantly different from the Millennial cohort's scores.

Membership Viability domain scores were also significantly different among generational cohort (F (3, 1697) = 19.32, p < 0.001). Bonferroni post hoc adjustments for multi-comparison of main effects showed, again, the Silent generation had significantly higher membership viability scores compared to the Boomer cohort (mean diff = 2.27, p < 0.001) and the Generation X cohort (mean diff = 1.88, p < 0.001). However, unlike other domain scores, the Millennial cohort had significantly higher scores compared to the Boomer cohort (mean diff = 1.92, p = 0.003). No other significant differences among the cohorts were found.

Holistic Growth and Commitment scores among the generational cohorts were significantly different (F (3, 1697) = 22.73, p < .001). Bonferroni post hoc adjustments for multi-comparison of main effects for generational cohort were performed and revealed the Silent generation had significantly higher scores than the Boomer cohort (mean diff = 1.49, p < 0.001), the Generation X cohort (mean diff = 2.82, p < 0.001), and the Millennial cohort (mean diff = 3.67, p < 0.001). Additionally, the Boomer cohort had significantly higher scores compared to the Generation X cohort (mean diff = 1.34, p = 0.010) and the Millennial cohort (mean diff = 2.19, p = 0.002). Again, the Generation X cohort scores were not significantly different from the Millennial cohort's scores.

The Inter-Relationships and Individual Well-Being combined score among generations was significantly different (F (3, 1697) = 46.71, p < .001). Bonferroni post hoc adjustments for multi-comparison of main effects for generational cohort showed the Silent generation had significantly higher scores compared to the Boomer cohort (mean diff = 2.53, p < 0.001), the Generation X cohort (mean diff = 5.13, p < 0.001), and the Millennial cohort (mean diff = 6.67, p < 0.001). Additionally, the Boomer generation had significantly higher scores compared to the Generation X cohort (mean diff = 2.60, p < 0.001) and the Millennial cohort (mean diff = 4.14, p < 0.001). Scores for the Generation X cohort were not significantly different from Millennial cohort's scores.

3.3 Summary of Domain Score Comparisons

A summary of the significant comparisons can be found in Table 2. The Silent generation had significantly higher scores than any other generational cohort overall and for individual domains with the exception of the Membership Viability domain. For this domain, their scores were not significantly different from the Millennial cohort scores. Additionally, the Boomer cohort had significantly higher total scores and individual domain scores compared to the Generation X and Millennial cohorts except, again, when comparing Membership Viability scores. In this case, the Boomer cohort had significantly lower Membership Viability scores compared to the Millennial cohort. The Boomer cohort and Generation X cohort did not differ significantly on Membership Viability. Scores for the Generation X cohort were not significantly different from scores for the Millennial cohort when comparing total life satisfaction or any of the individual domain scores.

Table 2. Summary of significant comparison results across domains

Comparison	Overall	Congregational Character	Membership Viability	Holistic Growth and Commitment	Inter-Relationships / Individual Well-Being
Silent vs. Boomer	sig. ↑	sig. ↑	sig. ↑	sig. ↑	sig. ↑
Silent vs. Gen X	sig. ↑	sig. ↑	sig. ↑	sig. ↑	sig. ↑
Silent vs. Millennial	sig. ↑	sig. ↑	n. s.	sig. ↑	sig. ↑
Boomer vs. Gen X	sig. ↑	sig. ↑	n. s.	sig. ↑	sig. ↑
Boomer vs. Millennial	sig. ↑	sig. ↑	sig. ↓	sig. ↑	sig. ↑
Gen X vs. Millennial	n. s.	n. s.	n. s.	n. s.	n. s.

4. Discussion

The outcomes of this study support the use of results from the LSSAWR within and across congregations of women religious locally, nationally, and internationally to examine differences in life satisfaction and core aspects of religious life among generational cohorts. In fact, the LSSAWR (total/sub score) can offer a meaning-making framework, whereby women religious (individually/communally) can use this instrument periodically as they assess their overall well-being (satisfaction levels) in this life commitment. Based on Park's (2007) research, a meaning system framework can offer a beneficial method when attempting to conceptualize compelling and "multidimensional influences of R/S [religion/spirituality] on individuals' health and well-being

(p. 320)." Consequently, the LSSAWR offers this meaning-making framework, as the 50 items of the LSSAWR emerged from Sister-participants' research responses, about their motivations to join and remain in religious life (Kreis, 2012; Kreis & Bardwell, 2011). As such, the LSSAWR is reflective of Sisters' inherent beliefs, objectives, and commitment to charism/mission as related to this particular life form. Furthermore, the general pattern that life satisfaction increases with age, found in this study, was also observed when conducting generational cohort comparisons among women religious worldwide (Kreis, 2010; 2012). As such, satisfaction with life was higher among the elder generational cohorts (Angelini et al., 2012). Moreover, allowing for continued confidentiality of participating congregations, aggregate data from the LSSAWR affords the opportunity to explore and report on national/international trends concerning the current state of and transformation in life satisfaction and various aspects of religious life. The information resulting from the use of the LSSAWR can be informative not only to women religious themselves but also to organizations and others who support the life and mission of Catholic Sisters worldwide.

A multilevel model analysis was performed on overall life satisfaction scores as well as the five individual domain scores, Congregational Character, Membership Viability, Holistic Growth and Commitment, and Inter-Relationships and Individual Well-Being, as measured by the LSSAWR. Due to model constraints, responses from a multi-generational and international sample of 1701 sisters representing 33 congregations, captured between 2016 and 2020, were used to determine if generational differences existed in scores. While some exceptions were observed, generally, trends showed that older generational cohorts were more highly satisfied overall and with various aspects of religious life and ministry/work compared to younger generational cohorts. This trend was particularly strong and statistically significant for the Silent and Boomer generations. One notable difference was the significantly lower Membership Viability scores for the Boomer generation compared to the Millennial generation.

These latter results may be explained by the fact that the Boomer generation is likely the most involved generation in the life of their congregations through positions of elected, appointed, or self-selected leadership services. This may result in greater levels of insecurity or disillusionment as related to the unknown future of religious life as compared to any other generation cohort around them. The lack of newer and younger members might increase their dissatisfaction and insecurity about the future of their own communities. Non-significant differences in Membership Viability scores between the Generation X and Boomer cohorts could be explained by where they are in their journey. Younger Generation X Sisters might be completing the final steps of their initial formation programs and/or establishing their ministry focus. On the other hand, older Generation X Sisters might struggle to balance their time and energy regarding commitment to their ministry, prayer, community, and social life (e.g., time to visit/attend to the needs of their elder parents and/or elder Sister-friends). Instead, the Millennial cohort may be more focused on their personal call to religious life and in determining their correct placement within a congregation of women religious. Therefore, they are not as involved regarding the evaluation of their community's vocation/formation programs. Alternately, the Silent Generation is experiencing less involvement regarding vocation/formation programs and declining well-being that shifts their focus on what is most essential as they continue to live and witness their commitment to religious life during this last phase. Therefore, congregations, who rely solely on members from the Silent Generation for their local, national, and international leadership, might encounter potential ethical challenges regarding the sustainability and vitality of their future. Instead, a compassionate engagement in courageous and honest conversations within their own and across memberships of a congregation of women religious, and with other supportive organizations might offer new insights and guidance. Recent news has indicated that there are congregations, who audaciously requested a pontifical commissary for their aging congregations (Stockman, January 13, 2022). Nonetheless, other congregations are strongly encouraged to engage in deeper conversations and in the evaluation of their trust and support of their younger members to lead their congregations into an imaginable and vital future. While these conversations can be very difficult, they are critical and with the support of the LSSAWR and qualified facilitators, they could offer an essential path forward.

Furthermore, in keeping the confidentiality of participating congregation, the ability of the LSSAWR to aggregate data, allows the LSSAWR research team to explore and report on national/international trends, meaning on the state and changes (transformation taking place over time) within the various aspects of religious life. The information resulting from the use of the LSSAWR can be enlightening not only to women religious themselves but also to organizations and others who support the life and mission of Catholic Sisters worldwide. Currently, the LSSAWR and its Manual are available in three languages, and participants can receive their individual LSSAWR total and five sub scores online. In collaboration with the LSSAWR research team and upon the completion of the LSSAWR online by a sufficient number of Sisters from one congregation, the

leadership team of that particular congregation can request a CR. It would be more cost efficient for each congregation, if the LSSAWR was continuously funded through an established fund, and thus accessible to apostolic women religious nationally/internationally.

Strikingly, the results within this paper have indicated that the LSSAWR can also confidently offer generation cohort comparisons within and across congregations worldwide pertaining to the LSSAWR total score and its sub scores. However, previous research (Moore & Kreis, 2021) has indicated that two (Inter-Relationships and Individual Well-Being) of the five sub scales scores will need to be combined when conducting generation comparisons of all age cohorts within and across congregations worldwide. While it is possible to conduct comparisons across the younger age cohorts on the LSSAWR total and five sub scores within and across congregations, it is strongly recommended to combine the aforementioned two of the five sub scores when engaging in generation comparisons that include the eldest age cohort within religious life.

Finally, the LSSAWR and the associated CRs have been used as a cost-effective and time efficient instrument for women religious to assess their personal and their congregation's well-being as they monitor progress toward fulfillment of strategic goals. Congregations who are challenged regarding the sustainability and vitality of their future, can use results from the LSSAWR and associated CRs as follows: Firstly, to engage in honest conversations within their own and across memberships of women religious congregations, and with other supportive organizations. Secondly, to evaluate their trust in and support of their younger members to lead their congregations into an imaginable and vital future. Additionally, women in the initial stages of formation and in collaboration with the formation and leadership team can use their individual LSSAWR scores as one resource to assess the vocational call and fit to this particular congregation. Likewise, Sisters as a part of their ongoing formation and especially in transitional periods of their life can reflect on personal, communal, and professional goals using their individual LSSAWR results.

4.1 Limitations

Sample sizes for the four generational cohorts reflected the national trend of a general decline in women religious orders over time (CARA, 2018). Thus, not all generational cohorts were represented within each congregational cluster, especially the Millennial cohort. Additionally, it may be that caution is warranted when interpreting the lack of statistically significant differences between the Generation X and Millennial cohorts. The two younger age cohorts are very diverse in their racial and ethnic backgrounds as compared to the two older cohorts who are more homogenous ethnically and racially. Of those who have participated from the Global North, many joined religious life in their late 20s or at an older age compared to those from the Global South who tend to enter this life form at a younger age. Despite age differences, younger participants from Generation X and older participants within the Millennials cohort were most likely in the initial stages of formation within religious life as they completed the LSSAWR. Thus, their experience within religious life would be more similar and novel as compared to the involvement within religious life of the elder two age cohorts who have been in religious life for decades. Even though the formation programs across congregations may differ, newer members are less likely to be fully involved in all aspects of religious life when compared to the sisters of the older age cohorts. In addition, since many are not yet of age to be in a commitment, the full age range of the Millennial cohort is not represented in the data and attenuates the investigation of generational comparisons until data which includes the full age range can be collected.

It was surprising that most variables, unavoidable issues with the ethnicity variable notwithstanding, were not significant predictors in the model despite variation in the responses among sisters. Additionally, studies show that omitting essential variables from a model can cause bias in estimation of effects (Kim & Frees, 2006). So, there could be variables, especially at the congregation level, that would impact the analysis that were not collected and available for use. It is common knowledge that congregations differ in size, geographic location, and resources. Any of these variables could have impacted the analysis if they were collected and available for analysis. Further, the lack of a standardized ethnicity variable in the second wave of data collection means it is unknown if that variable would have been impactful. However, the striking homogeneous commitment to religious life and charism/mission underlying the sample could not only account for the lack of prediction by traditional variables but may also ameliorate the omission of variables.

4.2 Summary

Results of this study provide evidence of generational cohort differences among women religious in total life satisfaction and individual domains related to core aspects of religious life as measured by the LSSAWR. To this point, women religious worldwide have provided positive feedback that the LSSAWR offered a cost-effective and time efficient tool for receiving feedback on their individual and communal growth and desire to live and

witness a joy-filled commitment to religious life. Women religious can use the LSSAWR individually throughout their life commitment in religious life, and communally across age cohorts to plan for their preferred viable and vital future. As such, the LSSAWR can be used as a resourceful tool to facilitate important and transformative processes within and across generation cohorts of women religious congregations worldwide. The LSSAWR results can facilitate deep listening as questions are raised globally within and across congregations such as: What is most important to each generation? What kind of responsibility, willingness, and commitment does each generation cohort have as they collaborate to create their preferred future in the here and now?

Acknowledgments

References

Angelini, V., Cavapozzi, D., Corazzini, L., & Papagnella, O. (2012). Age, Health and Life Satisfaction Among Older Europeans. *Social Indicators Research, 105*, 293-308. https://doi.org/10.1007/s11205-011-9882-x

Bell, B. A., Morgan, G. B., Schoeneberger, J. A., Kromrey, J. D., & Ferron, J. M. (2014). How low can you go? An investigation of the influence of sample size and model complexity on point and interval estimates in two-level linear models. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 10*(1), 1-11. https://doi.org/10.1027/1614-2241/a000062

Bliese, P. D., & Hanges, P. J. (2004). Being both too liberal and too conservative: the perils of treating grouped data as though they were independent. *Organizational Research Methods, 7*(4), 400-417. https://doi.org/10.1177/1094428104268542

Bloom, M. (2019). *Flourishing in ministry: How to cultivate clergy wellbeing*. Rowman & Littlefield, Lanham, MD.

Campbell, W. K., Campbell, S., Siedor, L. E., Twenge, J. M. (2015). Generational differences are real and useful. *Industrial and Organizational Psychology, 8*(3), 324-331. https://doi.org/10.1017/iop.2015.43

Carnevale, J. B., & Hatak, I. (2020). Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *Journal of Business Research, 116*, 183-187. https://doi.org/10.1017/iop.2015.43

Center for Applied Research in the Apostolate at Georgetown University (CARA). (2018). Retrieved from https://cara.georgetown.edu/services/religious-institutes

Clarke, P. (2008). When can group level clustering be ignored? Multilevel models versus single level models with sparse data. *Journal of Epidemiology and Community Health, 62*(8), 752-758. https://doi.org/10.1136/jech.2007.060798

Cohen, J., Cohen, P., West, S., & Aiken, L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Currie, J., & Rossin-Slater, M. (2014). Early-life origins of life-cycle well-being: Research and policy implications. *Journal of Policy Analysis and Management, 34*(1). https://doi.org/10.1002/pam.21805

Dedrick, R. F., Ferron, J. M., Hess, M. R., Hogarty, K. Y., Kromrey, J. D., & Lee, R. (2009). Multilevel modeling: a review of methodological issues and applications. *Review of Educational Research, 79*(1), 69-102. https://doi.org/10.3102/0034654308325581

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Oishi, S. & Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour, 2*, 253-260. https://doi.org/10.1038/s41562-018-0307-6

Dobrakowski, P. P., Skalski, S., Surzykiewicz, J., Muszynska, J., & Konaszewski, K. (2021). Religious coping and life satisfaction during the COVID-19 pandemic among Polish Catholics. The mediating effect of Coronavirus anxiety. *Journal of Clinical Medicine, 10*(21), 4865. https://doi.org/10.3390/jcm10214865

Duffy, R. D., & Sedlacek, W. E. (2010). The salience of a career calling among college students: Exploring group differences and links to religiousness, life meaning, and life satisfaction. *The Career Development Quarterly, 59*(1), 27-41. https://doi.org/10.1002/j.2161-0045.2010.tb00128.x

Dunn, T. (2017). The transformation of religious life: Contemplative reflections of 'younger' members. *Leadership Conference of Women Religious (LCWR)*, The Occasional Papers, Winter 2017 (pp. 25-31).

Ebaugh, H. R., Lorence, J., & Saltzman Chafetz, J. (1996). The growth and decline of the population of Catholic nuns cross-nationally, 1960-1990: A case of secularization as social structural change. *Journal for the Scientific Study of Religion, 35*(2), 171-183. https://doi.org/10.2307/1387084

Erikson, E. H. (1959). *Identity and the Life Cycle*. New York, USA: International Universities Press.

Gittins, A. J. (2015). *Living mission interculturally: Faith, culture, and the renewal of praxis*. Liturgical Press, Collegeville, Minnesota.

Glass, G. V., & Hopkins, K. D. (1996). *Statistical methods in education and psychology* (3rd ed.). Boston, MA: Allyn & Bacon.

Glazier, M., & Hellwig, M. (2004). *The modern Catholic encyclopedia*. Collegeville, Minnesota. Liturgical Press.

Gordon, P. A. (2017). Exploring generational cohort work satisfaction in hospital nurses. *Leadership in Health Services, 30*(3), 233-248. https://doi.org/10.1108/LHS-02-2016-0008

Hayes, A. F. (2006). A Primer on Multilevel Modeling. *Human Communication Research, 32*(4), 385-410, https://doi.org/10.1111/j.1468-2958.2006.00281.x

Hedges, L. V., & Hedberg, E. C. (2007). Intraclass Correlation Values for Planning Group-Randomized Trials in Education. *Educational Evaluation and Policy Analysis, 29*(1), 60-87. https://doi.org/10.3102/0162373707299706

Hereford, A. (2014). *Religious life at the crossroads: A school for mystics and prophets*. Maryknoll, NY: Orbis Books.

Hereford, A. (2019). *Beyond the crossroads: religious life in the twenty-first century*. Maryknoll, NY: Orbis Books.

Howe, & Strauss. (2007). The next 20 years: how customer and workforce attitudes will evolve. *Harvard Business Review, 85*(7-8), 41-52.

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York: Routledge, Taylor & Francis Group.

Huang, F. L. (2016). Alternatives to multilevel modeling for the analysis of clustered data. *The Journal of Experimental Education, 84*(1), 175-196. https://doi.org/10.1080/00220973.2014.952397

Huang, F. L. (2018). Multilevel modeling myths. *School Psychology Quarterly, 33*(3), 492-499. https://doi.org/10.1037/spq0000272

Joshanloo, M. (2019). Cultural religiosity as the moderator of the relationship between affective experience and life satisfaction: A study in 147 countries. *Emotion, 19*(4), 629-636. https://doi.org/10.1037/emo0000469

Kim, J-S., & Frees, E. W. (2006). Omitted variables in multilevel modeling. *Psychometrika, 71*, 659-690. https://doi.org/10.1007/s11336-005-1283-0

Kincaid, C. (2012). Guidelines for selecting the covariance structure in mixed model analysis. *Proceedings of the SAS Global Forum 2012 Conference*. Cary, NC: SAS Institute Inc.

Kreis, M. C. (2010). *Assessment of Life Satisfaction in Apostolic Women Religious: The Development of a New Instrument*. (Dissertations, Paper 46).

Kreis, M. C. (2012). The development of a new instrument for the assessment of life satisfaction in apostolic women religious. *Journal of Spirituality in Mental Health, 14*(2). https://doi.org/10.1080/19349637.2012.671053

Kreis, M. C. (March 27, 2018). *Invitation to an Incredible Visitation*. In Global Sisters Report: A project of the National Catholic Reporter.

Kreis, M. C. (November 5, 2019). *Life satisfaction survey is producing welcome results for sisters*. In Global Sisters Report: A project of the National Catholic Reporter.

Kreis, M. C. (2020). Younger sisters' hesitations, obstacles, and fears. *Doctrine & Life, 70*(2), 50-60.

Kreis, M. C., & Bardwell, R. (2011). Motivational factors of women committed to religious life. *Journal of Spirituality in Mental Health, 13*(3). https://doi.org/10.1080/19349637.2011.593407

Kreis, M. C., & Crammond, J. (2019). Younger sisters' concerns prior to their entrance to religious life. *Journal of Spirituality in Mental Health, 23*(1), 47-61. https://doi.org/10.1080/19349637.2019.1626319

Kreis, M. C., Crammond J., & Lunz, M. (2016). Motivational factors across three generations of women committed to religious life. *Journal of Spirituality in Mental Health, 18*(3), 163-184. https://doi.org/10.1080/19349637.2015.1088427

Kreis, M. C., Crammond, J., & Reynolds, C. (December 6, 2018). *Life Satisfaction Scale for Apostolic Women Religious (LSSAWR)*. Examiner's Manual (English).

Kreis, M. C., Crammond, J., & Reynolds, C. (January 4, 2019). *Life Satisfaction Scale for Apostolic Women Religious (LSSAWR)*. Examiner's Manual (Spanish translation).

Kreis, M. C., Crammond, J., & Reynolds, C. (May 28, 2019). *Life Satisfaction Scale for Apostolic Women Religious (LSSAWR)*. Examiner's Manual (German translation).

Kreis, M. C., & Diaz, M. K. (2021). Factors cultivating well-being of women religious in ministry and their resonance with research on the workforce. *Journal of Spirituality in Mental Health*. https://doi.org/10.1080/19349637.2021.1886622

Krok, D., Zarzycka, B., & Telka, E. (2021). Religiosity, meaning-making and the fear of COVID-19 affecting well-being among late adolescents in Poland: A moderated mediation model. *Journal of Religion and Health, 60*, 3265-3281. https://doi.org/10.1007/s10943-021-01375-7

Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., & Liu, J. (2020). Projecting the potential impact of covid-19 school closures on academic achievement. *Educational Researcher, 49*(8), 549-565. https://doi.org/10.3102/0013189X20965918

Leadership Conference of Women Religious (LCWR). (2008). Retrieved from https://www.lcwr.org

Life Satisfaction Scale for Apostolic Women Religious (LSSAWR) website. Retrieved from https://ctu.edu/faculty/maria-clara-kreis

McCoach, D. B., & Adelson, J. L. (2010). Dealing with dependence (part 1): Understanding the effects of clustered data. *Gifted Child Quarterly, 54*, 152-155. https://doi.org/10.1177/0016986210363076

McNeish, D. M., & Stapleton, L. M. (2014). The effect of small sample size on two-level model estimates: A review and illustration. *Educational Psychology Review, 28*(2), 295-314. https://doi.org/10.1007/s10648-014-9287-x

Moerbeek, M. (2004). The consequence of ignoring a level of nesting in multilevel analysis. *Multivariate Behavioral Research, 39*(1), 129-149. https://doi.org/10.1207/s15327906mbr3901_5

Moore, D. W., & Kreis, M. C. (2021). Implications of a measurement invariance study by age cohorts for the life satisfaction survey for apostolic women religious (LSSAWR). *International Journal of Psychological Studies, 13*(4), 81-92. https://doi.org/10.5539/ijps.v13n4p81

Nezlek, J. B. (2008). An introduction to multilevel modeling for social and personality psychology. *Social and Personality Psychology Compass, 2*(2), 842-860. https://doi.org/10.1111/j.1751-9004.2007.00059.x

O'Murchú, D. (2016). *Religious life in the 21st Century: The prospect of refounding*. New York: Orbis Books, Maryknoll.

Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and the quality of life. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A Sourcebook of Current Theory, Research, and Therapy* (pp. 224-237). New York: John Wiley & Sons.

Park, C. L. (2007). Religiousness/Spirituality and Health: A meaning systems perspective. *Journal of Behavioral Medicine, 30*, 319-328. https://doi.org/10.1007/s10865-007-9111-x

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin, 136*(2), 257-301. https://doi.org/10.1037/a0018301

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analytic methods* (2nd ed.). Thousand Oaks, CA: Sage.

Schumm, W. R., Nichols, C. W., Sheetman, K. L., & Grigsby, C. C. (1983). Characteristics of responses to the Kansas Marital Satisfaction Scale by a sample of 84 married mothers. *Psychological Report, 53*, 567-572. https://doi.org/10.2466/pr0.1983.53.2.567

Singh, J., & Singh, J. (2020). COVID-19 and its impact on society. *Electronic Research Journal of Social Sciences and Humanities, 2*(1), 168-172. Retrieved from https://ssrn.com/abstract=3567837

Snijders, T., & Boskers, R. (2012). *Multilevel analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Sonnentag, S. (2015). Dynamics of well-being. *Annual Review Organizational Psychology Organizational Behavior, 2*(1), 261-293. https://doi.org/10.1146/annurev-orgpsych-032414-111347

Stockman, D. (January 13, 2022). *Nearing the end, congregation finds new life.* Retrieved from https://www.globalsistersreport.org/news/news/news/nearing-end-congregation-finds-new-life

Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584 to 2069.* New York: William Morrow and Company, Inc.

Thomas, & Heck. (2001). Analysis of large-scale secondary data in higher education research: Potential perils associated with complex sampling designs. *Research in Higher Education, 42*, 517-540. https://doi.org/10.1023/A:1011098109834

Vieten, C., & Lukoff, D. (2022). Spiritual and religious competencies in psychology. *American Psychologist, 77*(1), 26-38. https://doi.org/10.1037/amp0000821

Xiong, J., Lipsitz, O., Nasri, F., Lui, L., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders, 277*, 55-64. https://doi.org/10.1016/j.jad.2020.08.001

Zarzycka, B., & Zietek, P. (2019). Spiritual growth or decline and meaning-making as mediators of anxiety and satisfaction with life during religious struggle. *Journal of Religion & Health, 58*, 1072-1086. https://doi.org/10.1007/s10943-018-0598-y

Appendix A

Table A1. Estimated means and standard errors by cohort and score

Generational Cohort	Total Life Satisfaction Score		Congregational Character		Membership Viability		Holistic Growth and Commitment		Inter-Relationships / Individual Well-Being	
	mean	s. e.	mean	s. e.	mean	s. e.	mean	s. e.	mean	s. e.
Silent	208.63	0.91	54.62	0.30	33.42	0.22	57.59	0.24	66.00	0.31
Boomer	198.24	0.95	50.52	0.31	31.14	0.23	53.11	0.25	63.48	0.32
Gen X	192.52	1.29	48.28	0.42	31.60	0.31	51.77	0.34	60.87	0.43
Millennials	191.28	2.06	47.96	0.68	33.06	0.50	50.92	0.54	59.34	0.69

Copyrights

Effects of Variable Practice on Kinematics and Accuracy of Throwing in Boys with Developmental Coordination Disorder

Eryk Przysucha[1] & Taryn Klarner[1]

[1] School of Kinesiology, Lakehead University, Thunder Bay, ON, P7B-5E1, Canada

Correspondence: Eryk Przysucha, School of Kinesiology, Lakehead University, Thunder Bay, ON, Canada.

Abstract

Many children with Developmental Coordination Disorder (DCD) cannot throw, which often prevents them from taking part in age-appropriate activities. The present research examined the degree to which variable practice, embedded in the Motor Schema Theory (Schmidt, 1975), would positively affect movement effectiveness, and coinciding accuracy, as well and parametrization of spatial and temporal aspects of control. Nine boys diagnosed with DCD (M = 10.7 years, SD = 1.0) participated in a pre-test, ten 30 minute training sessions, post-test, and a transfer test. Only pre- and post-tests involved kinematic data collection and measurement of accuracy. The variable practice involved throwing a tennis ball from a distance of 5 meters at 3 different targets (40 cm vs 35 cm vs 25 cm), positioned in three different locations. The transfer test was presented in a new environment with novel conditions. Results reveled improvement in movement effectiveness, at the group level, however when individual data was examined not all participants benefited to the same degree, especially when the transfer test was considered. All participants improved in regards to their accuracy. The changes in the outcome coincided with changes in spatial parametrization at the elbow, but not the shoulder. Also, higher velocity of the ball and angular velocity at the elbow were evident. From the clinical standpoint, the present study highlighted the importance of introducing context relevant variability in the learning program, however the decline in performance in the transfer test indicates that more research is warranted to understand the lasting effects on motor schema.

Keywords: variable practice, parametrization, DCD, spatial / temporal control, accuracy

1. Introduction

Overhand throwing, and the coinciding motion, is incorporated in a variety of sport activities such as football, baseball, the overhead clear in badminton, and volleyball serve and it is the predominantly used action in a sport such as handball (Butterfield & Loovis, 1993). Thus, the development of throwing is essential to meaningful involvement in many activities, for both boys and girls (Gromeier, Koester, & Schack, 2017). Developmentally, by the age of 7 or 8 boys start to exhibit adult-like performance as evident from behavioral descriptors of the emerging actions (Payne & Isaacs, 2002), as well as corresponding spatial and temporal kinematic parameters of control (Yan, Pen, & Thomas, 2000). In regards to the developmental process of throwing, the type of throwing technique utilized by children showed a progression from a 'static' and 'rigid' throwing technique to a more 'dynamic' and 'sequentially-linked' technique where the trunk, shoulder and the elbow joints are actively involved in the action. These changes coincided with higher velocities of the ball and improved accuracy and distance, where relevant (Yan et al., 2000). Although developmentally throwing improves with age, in a pedagogical context, different types of learning approaches have been used to enhance these skills even among the typically developing children. Different types of instruction such as critical cues, a biomechanical approach, and traditional approaches based on modelling have been implemented with varying degrees of success (Adams, 2001; Fronske, Blakemore, & Abendroth-Smith, 1997).

Little research has been devoted to improvement of these skills in children who are atypically functioning, more specifically those diagnosed with Developmental Coordination Disorder (DCD). This is a deficit that affects approximately 10 to 15 percent of school-age children (Henderson & Sugden, 2007), and affects boys more than girls (Kasdesjo & Gillberg, 1998). The focal point of screening and diagnosis is the fact that children with DCD perform actions that are qualitatively different, are more variable, and lack effectiveness when compared to the actions exhibited by typically developing, age-matched children. These motor issues often prevent them from

taking part in organized sports or even playground age-appropriate activities. Being excluded from such settings, often due to bulling, may lead to psychosocial problems such as low self-worth, self-esteem and high anxiety (Piek, Barret, Allen, Jones, & Louise, 2010). In line with predictions of self-determination theory, children with DCD may exhibit lower perceptions of competence, locus of control or sense of belonging which in turn negatively affect their intrinsic motivation to take part in physical activities, further exacerbating their movement problems (Ryan & Deci, 2017). Although, from the motor perspective, children with DCD represent a heterogeneous population in regards to the nature of the movement problems exhibited, anecdotal evidence and clinical reports confirm that many of them struggle to learn how to perform an overhand throw (Wilmut & Barnett, 2019). In a recent and the only comprehensive study thus far, Schott and Getchell (2021) showed that children with DCD between 7 and 11 years of age exhibited different movement patterns when compared to typically developing children of comparable ages, when asked to throw as "accurately and as hard" as they could at target from various distances. Also, these different coordination tendencies coincided with substantially lower success rate in terms of the outcome measures. Despite the prevalence of throwing problems in this populations, there has been no research which explicitly examines the effectiveness of theoretically sound learning approaches to address these problems.

Over the last few decades one of the most important corner stones in the field of motor learning has been the variability of practice hypothesis (VPH) (Boyce, Coker, & Bunker, 2006), an extension of Schema theory put forward by R. Schmidt (1975). The key constructs associated with this conceptual framework are the notion of generalized motor program (GMP), and the schema, which is a "rule" that conceptually scales the sensory outcomes produced during performances and the magnitude of spatial (e.g., displacement) and temporal (e.g., velocity) parameters required for the successful completion of the task (Sherwood & Lee, 2003). In the context of motor learning, variable practice enhances the development of the schema. This approach is conceptually (Schmidt & Wrisberg, 2010), pedagogically (Boyce et al., 2006), and clinically sound as "natural variability" represents an inherent component of most voluntary actions. There is a vast amount of literature supporting the effectiveness of variable type of practice across different populations and skills such as baseball hitting (e.g., Hall, Domingues, & Cavados, 1994), striking in soccer (e.g., Zetou et al., 2014), forehand in tennis strokes (Douvis, 2005), and basketball shooting (e.g., Mammert, 2006). There is also evidence that this type of approach can have a positive effect on typically developing children (e.g., Wulf & Schmidt, 1993), children with movement problems such as Down syndrome (e.g., Noghondar et al., 2021), and children with DCD (Przysucha, Klarner, & Zerpa, 2021). Also, there is much research in the adapted field, but less specifically in the context of DCD population, which showed that task specific interventions, based on instructions that are focused directly at the targeted task across ecologically valid constraints, could be an effective clinical approach (e.g., Mandich, Polatajko, Macnab, & Miller, 2001; Yuo, Barnet, & Sit, 2018). Given that from the clinical standpoint variable practice constitutes a task-specific intervention, the purpose of this study was to examine if variable practice could enhance effectiveness and accuracy of throwing exhibited by children with DCD, and capture the coinciding changes in spatial and temporal kinematic parameters.

2. Method

2.1 Participants

Recruitment involved purposive sampling through local clinical programs. Nine boys diagnosed with DCD (M = 10.7 years, SD = 1.0) were recruited. In order for a child to be included in the study he had to meet all diagnostic criteria of DCD (DSM-V; APA, 2013). The motor problems had to impact areas such as academic achievement or activities of daily living, which was inferred from the Developmental Coordination Disorder Questionnaire (DCDQ; Wilson & Crawford, 2007). The participants could not exhibit any known medical condition that may contribute to the movement difficulties, which was inferred via consent forms from the parents. Finally, the child had to have coordination abilities that were significantly lower when compared to their age-matched peers, as evident from the Total Test Score (TTS), and the percentile scores from Movement Assessment Battery for Children – Second Edition (MABC-2), for age-band 3 (Henderson et al., 2007). Children had to score below 57 (M = 50.2, SD = 4.1), in terms of total score, which placed them between 5th and 10th percentile. Also, in terms of throwing skills the child had to score 40% or below, on the throwing item from MABC-2, where he was asked to perform an overhand throw at a target from 2.2 meters with a tennis size ball.

2.2 Procedures

All procedures were approved from a local research ethics committee with guidelines that are in line with the Declaration of Helsinki. At the pre-test and post-test formal testing was implemented, including kinematic analysis. The child was asked to throw at a target 50 cm in diameter, placed on the black tarp, from the distance

of 5 m. The target height was adjusted to each participant's standing eye level. Participants were not blinded from knowledge of the results and verbal encouragement was provided; phrases included ('nice', 'well done' and 'good job'). Each child was allowed 3 practice trials, and subsequently completed 10 formal trials. In order to infer the number of hits, as well as the accuracy of the throws, the balls were chalked so that after each trial the researcher was able to measure the distance between the center of the ball and the center of the target (see Figure 1). For the purpose of the kinematic analysis, reflective markers were placed on relevant bony landmarks at the hip (greater trochanter), shoulder (acromion), elbow (lateral epicondyle), and wrist (styloid process) of the throwing arm. As the propulsion phase of the action was of interest, participants were allowed to implement their own preferred throwing strategy by either throwing from the standing position or taking one step towards the target. The 3D kinematic analysis was carried out using two high-speed Basler cameras set up according to recommendations for optimal camera positioning (Allard, Stokes, & Blanchi, 1995), with a sampling frequency of 200 Hz, and filtered using a fourth-order low pass digital filter with a cut-off frequency of 12 Hz (Yan et al., 2000). Data were then subsequently analyzed using the Vicon Peak Motus 8 system.

In terms of the intervention, participants were asked to attend 10 separate, 30 minute, sessions involving variable practice. These sessions did not involve kinematic data collection, or measurement of accuracy. During the sessions, the participants were asked to throw a tennis ball, from a distance of 5 meters, at 3 different sized targets (40 cm vs, 35 cm vs 25) cm), positioned in three different locations (Figure 1). Each participant was asked to carry out the same sequence of throws, attempting 5 throws at the target straight in front of him positioned at the head level, then 5 attempts at the target to his right positioned above the head, and 5 throws at the target furthest to the right, positioned at chest high. After 15 throws, the locations of the targets were varied for variable practice clockwise. In total 45 throws were completed per session. A transfer test was carried out in a different environment in order to assure the novelty of the task. Although the size of the target remained the same at 50 cm, this time the participant was asked to throw from the distance of 6 meters, which was adjusted to the chest height of each participant (Figure 1). Again, 10 throws were attempted.

Figure 1. Experimental set up for the pre- and post-test (left), the training tasks (middle), and transfer test (right)

2.3 Measures and Data Reduction

For the kinematic analysis, the propulsive phase of the throw was analyzed where the beginning of the movement was defined as the start of forward and continuous motion of the wrist marker in the direction of the target. The end of the trial was defined as the moment when the ball was released, as inferred from the instance when the wrist marker shifted from acceleration to deceleration. Four kinematic variables were derived from the data in order to examine the potential changes due to variable training. Temporal aspect of control was inferred from the wrist velocity at the point of release, which coincides with peak ball velocity. Angular velocity of the elbow at the instance of ball release was also captured. In the spatial domain, in order to reconstruct the qualitative nature of the action, shoulder and angular displacement at the moment of ball release were derived. The kinematic profiles were derived from the reflective passive markers which were attached to the greater trochanter (hip marker), the acromion (shoulder marker), lateral epicondyle (elbow marker), and the styloid process of the ulna (hand marker), of the participant's throwing arm. For the purpose of inferring the angular displacement and velocity, shoulder displacement was defined as the angular changes between the hip, shoulder and elbow markers, whereas the displacement and velocity of the elbow were derived from the positional data defined between the shoulder, elbow and wrist markers. The peak velocity of the ball was inferred from the linear velocity of the wrist marker.

Movement effectiveness was inferred from the percentage of successful throws out of 10 attempts. In regards to accuracy, mean absolute constant error (AE) was calculate (AE = Σ (xi-T)/k, where Xi was the observed score, T was the target, and K was the number of trials considered (k = 10)). The observed score represented the distance from the center of the ball in-print to the center of the target (cm), regardless of the direction / location of the attempt (e.g., above or below).

2.4 Research Design & Analysis

A repeated measure design was implemented, followed by repeated measures analysis of variance (ANOVA), with Time as the within factor (pre- vs post vs transfer test). If significant, this analysis was followed by a series of dependent samples t-tests as pre-planned comparisons on the measure of effectiveness. As the accuracy as well as the kinematic measures were obtained only during the pre- and a post-test therefore a series of dependent samples t-testes were implemented. All the analyses were carried out at alpha = .05, using SPSS® Statistics software.

3. Results

3.1 Movement Effectiveness

In terms of the number of target hits results revealed a significant effect of time (F(9)=22.80, *p*<.001). The planned comparisons further showed a significant difference between the pre- and post-test (t(8)=7.35, *p*<.001), post- and transfer test (t(8)=3.01, *p*< .01), as well as between pre- and transfer tests (t(8)=3.45, *p*<.004). The analysis of potential changes in the accuracy of the emerging actions revealed a statistically significant difference as on average less absolute error was evident at the post session (M=57.02cm, SD=11.2) as compared to the pre-test (M=78.8cm, SD=14.7) (t(8)=10.62, *p*<.001). As evident from the individual analysis (Table 1), not all children improved their performance in terms of the number of hits, however all of them improved their accuracy with variable practice training. Also, when the transfer test data was examined, it was evident that the level of effectiveness evident at the post-test did not generalize to the transfer test.

3.2 Temporal Parameters

The analysis of release velocity, as a proxy for the temporal parameters, showed a statistically significant increase from pre- (M=11.06m/s, SD=1.93) to post test (M=14.5m/s, SD=1.48) (t(8)=4.74, *p*<.001). Also, the analysis of angular velocity of the elbow, at the time of ball release, revealed a significant change between the pre- (M=429.77deg/sec, SD=33.20) and the post test (M=531.1deg/sec, SD=28.64) (t(8)=7.58, *p*<.001).

3.3 Spatial Parameters

The analysis of spatial aspects of control revealed no statistically significant differences between angular displacement of the shoulder, at the time of ball release, between the pre- (M=80.44deg, SD=9.22) and the post-test (M=83.7deg, SD=7.32) (t(8)=1.65, *p*=.07). However, this was not the case for the angular displacement of the elbow as on average participants exhibited statistically larger elbow extension at the post test (M=112.4deg, SD=12.3) as compared to the pre-test (M=82.33deg, SD=9.57) (t(8)=7.82, *p*<.001).

Table 1. Individual and group (Mean, SD) data for number of hits (%), and absolute accuracy (AE) (cm)

Participants	Pre-Test		Post-Test		Transfer-Test
	Hits	AE	Hits	AE	Hits
1	30	74.2	70	46.3	70
2	30	78.4	70	52.7	40
3	40	59.2	80	39.2	60
4	10	91.2	30	71.6	20
5	20	76.5	70	54.3	60
6	10	102.4	40	62.3	30
7	10	98.6	30	67.6	20
8	20	92.1	60	72.1	60
9	30	56.7	70	47.2	70
Mean	22.2	88.8	60.2	57.02	50.3
SD	10.9	14.7	16.3	11.2	19.5

4. Discussion

4.1 Movement Effectiveness and Accuracy

It was hypothesized that variable practice would have a meaningful effect on movement effectiveness, which in practical and clinical terms represents the most important index of movement status and its functionality. As evident from the group data, this hypothesis was confirmed as the results showed that in fact, children achieved a higher percentage of target hits at the post test (M = 60%) as compared to the pre-test (M = 20%). Also, there was a significant difference between the pre- and transfer test, once again confirming the positive outcomes of the variable practice. However, it should also be pointed out that when the post and transfer tests were examined the significant difference showed that when participants were presented with a similar, but not the same task, the participants decreased their proficiency. Stated differently, the participants improved their performance over the acquisition period, however in regards to their ability to "transfer" their skills to a similar task, their performance declined.

Another variable which allowed inferences to be made about the nature of the emerging outcome was the absolute error. As evident from the data, similar to movement effectiveness, children with DCD improved their accuracy as a result of variable practice, when the pre- and post-test were examined. In addition, when the individual data were examined (Table 1), it is evident that accuracy was enhanced across all the participants, thus confirming the inferential analysis. In the context of the task set up, and how absolute error was operationalized, it is evident that although the changes in movement effectiveness were not pronounced for all of the participants, even when they missed the target they were closer to the desired location. The data showed that the changes in the absolute error, even for the least skilled individuals (4, 6, 7) was approximately 20 to 30 cm on average. To put it in the context of task constraints, considering that the diameter of the target was 40 cm in length, the decrease in the location of the attempts was close to the radius of the target, which from the clinical perspective has to be considered as meaningful. Thus, although some of the participants were still missing the target on the majority of the attempts the resulting outcomes can be characterized as "near misses", as compared to the initial attempts that could be characterized as "full misses", where the degree of error was substantial.

Despite the prevalence of this issue in the DCD population, a very limited amount of research has been carried out on throwing, compared to the volumes of research devoted to performance of other skills such as balance or ball catching. In a recent, and comprehensive study, Schoot and Getchell (2021) reported that when performing a comparable task, to the one implemented in the current study, children with DCD were successful on 10-30% of attempts, as compared to their typically developing peers. This degree of movement effectiveness is in line with the performance evident in the present sample, where children with DCD likely represent the bottom 10% of the "normal" population. Thus, developmentally they appear to be substantially below what is considered an average performance. To our knowledge, there is no other studies involving children with or without DCD which reported on the degree of movement effectiveness in the context of the task constraints imposed here.

In regards to the accuracy, Kawamura and colleagues (2016) reported that developmentally the degree of the radial error decreased in 9 to 10 year old children by almost half. Also, no differences were evident when this performance was compared with 12 year old children, suggesting that accuracy plateaus around this time. Interestingly, in their study, the degree of accuracy remained constant across conditions, for both groups, regardless if the tasks constraints emphasized force or accuracy. In terms of the effects of variable practice on throwing accuracy, Matsouka and colleagues (2010) showed that children with intellectual disability enhanced their accuracy from pre- to post as a result of varying the distance from which the children had to hit a target fixed 5meters away. Also, their scores on the transfer test, which was a basketball hoop, confirmed that the initial improvements in performance "transferred" to a novel task. Unfortunately, this was not the case in the present study. However, a very similar pattern of results emerged in the most recent study by Noghondar and colleagues (2021), where the researchers asked children with Downs Syndrome to throw a ball at a target 1meter in diameter, once again by manipulating the distance during the variable practice. The magnitude of absolute error decreased systematically from the pre (M11cm) to post test (M=8.3 cm), and the retention test (M= 8cm). However, the magnitude of error for the control group, who was involved in a constant type of practice, remained the same (M= 11 - 13 cm). Thus, based on the current results, and the existing, even if limited literature, it appears that children with DCD exhibited a decrease in the emerging error that is comparable to that exhibited by other atypically developing children. Collectively the present and past research showed a robust finding that manipulating different task constraints (e.g., location; distance) can have a positive impact on refining the GMP responsible for throwing actions.

4.2 Spatial Control

Given the nature of the task, the majority of motor behaviour literature either explicitly or implicitly examined the nature of spatial adaptations of the shoulder and elbow joints. Kinematically, often such actions have been analyzed at the instance of ball-release. In terms of the shoulder adaptations, the current data showed that on average the shoulder remained flexed at approximately 90degrees, at the time of ball release, through the testing. Hence, no differences due to practice were evident. From the qualitative standpoint, this type of alignment indicates that the ball was released well in front of the trunk, which is consistent with mature, 'sequentially-linked' throws (Lorson, Stodden, Landergorfer, & Goodway, 2013). This is also in line with data reported by Fleising, Escamilla and Andrews (1996) who noted that skilled adult throwers exhibited this kind of alignment, at approximately 90degrees, when throwing for power. Developmentally, mixed results emerged as some studies reported developmental changes related to the position of the shoulder at ball release (Stodden et al., 2006), while others showed that such alignment remained invariant from about 6 years of age on (Yan et al., 2000). Palmer and colleagues (2021) as well as Breidenbach (2000) showed a similar scenario reporting no developmental changes in the shoulder range of motion when children between 6 to 14 years of age were compared. Thus, it appears that the tendency to release the ball in front of the trunk, which is achieved biomechanically by extending the shoulder to 90 degrees, or beyond, at the time of ball release, represents an invariant component of the action which most of children tend to exhibit from even a relatively early age. In the context of children with DCD, this indicates that possibly the issues they face may be embedded in the control, rather than coordination domain of organization.

The analysis of the elbow showed a different scenario. The nature of spatial adaptations exhibited at the elbow were differentiated between the pre- and post-test performance. From the qualitative standpoint, the fact that children were realising the ball past 100 degrees of extension, on average, indicated that the ball was released at the end of the follow-through. This type of tendency often coincides with achieving a maximum velocity at the instance of ball release (Yan et al., 2000). These findings were consistent within the developmental literature showing that with age children tend to increase the range of motion at the elbow from 80 to 110degrees between the age of 4 and 6, respectively (Yan et al., 2000) and reaching is increased from approximately 90 degrees at 7 years old (Breidenbach, 2000) to about 115degrees 10 years old (Larsen et al., 2013). The reason behind this substantial extension change could be attributed to the task constraints, as well as it could be related to the actual biomechanics of throwing. In the former case, the fact that the ball was in the hand closer towards the end of the throwing motion may indicate the desire to maintain the directional precision, as the child has control over the ball until the end of the available range of motion. Also, the presence of this large amount of extension, at the time of ball release, could be attributed to the fact that when "sequentially-linked" throws are performed, the limb is moving fast, thus it takes longer to decelerate and stop the movement until the elbow goes through the majority of its range of motion. Thus, it is likely that in order to optimize energy transfer and achieve a high distal segment velocity, and resulting ball-release velocity, the tendency to extend the elbow is warranted. At present, there is no motor learning research which examined kinematically the nature of these adaptations in children with DCD.

4.3 Temporal Control

Velocity represents one of the essential control parameters in the context of Schema Theory, GMP, as well as variable practice. In the present study, the issue of temporal adaptations were examined via two variables. In terms of the angular velocity of the elbow, at the instance of ball release, the data showed that variable practice coincided with increased angular velocity of the joint. The amount of developmental literature devoted to angular velocity of joints during throwing is limited. Nevertheless, research studies examining the dynamics of throwing actions across sports such as baseball, football or softball confirmed that elbow joint torques, and the resulting velocities, are critical to the development of the skill (e.g., Fleising et al., 1999). In terms of the developmental studies, Yan and colleagues (2000) showed that differences between younger and older children in throwing also coincided with changes in angular velocity of the elbow. These data showed that although peak velocity of the elbow was achieved earlier during the propulsion phase of the movement, the angular velocity at the elbow in 6year-olds was twice as high as compared to younger children. Also, the velocity of the elbow was substantially larger as compared to the velocity of the shoulder, suggesting that biomechanically the control of the elbow joint may be more essential. A similar scenario was evident in the study involving children with Downs Syndrome exposed to variable practice throwing at targets at different locations. Once again, angular velocity of the elbow was one of the parameters that was modulated in order to adapt the GMP to changes in the task demands (Noghondar et al., 2021). Further research is warranted in this context.

In the context of discrete motor skill such as throwing, the potential changes in the velocity of the ball at the instance of release represents one of the most indicative control parameters associated with development and learning of this skill in children and adolescents (e.g., Halverson, Roberton, & Langendorfer, 1982). The changes in parametrization of the ball speed evident here are in line with the developmental trajectory reported by Roberton and colleagues (1979), and Roberton and Konchak (2001). All these studies showed that between 6 and 13 years of age there is a linear increment in the ball velocity suggesting that this temporal variable represents a strong predictor of changes in the overall skill level of the participant. The same pattern was evident in a study comparing throwing actions of adolescence and adults (Larson et al., 2013), showing that achievement of more advanced skill level coincides with changes in ball velocity. Indirectly, the changes in ball speed are indicative of age and/or skill related adaptations to force production implemented in the overarm throw (Roberton & Konczak, 2001). This appears to be the case regardless if the goal of the throw is accuracy, or if the performer is instructed to throw as "hard" as he/she can. For example, in a study by Kawamura and colleagues (2016) the data showed that although developmentally there were substantial changes in ball speed when 7-8 and 9-10 year olds were compared, these changes were consistent regardless if the task demanded accuracy or power. This observation suggests that parametrization of ball speed (e.g. velocity of the wrist) is essential and required regardless of the different task constraints. In the present study, the explicit goal of the task was to be accurate, yet the changes in ball speed were evident despite the fact that the distance was not manipulated in order to evoke more force.

5. Conclusion and Clinical Implications

Development of the GMP is essential to the ability to perform discrete actions pertaining to the same family of movement, across many different task demands. From the motor learning perspective, variable practice essentially makes the GMP more generalizable (Czyż, Zvonař, & Pretorius, 2019). From the practical/clinical standpoint, and in line with a well-known specificity of practice hypothesis it is recommended that skills that are variable in nature are practiced in conditions that are also variable. In the adapted field, this approach is also known as task-specific instruction, which is focused directly at the targeted task under ecologically valid tasks demands (Mandich et al., 2001).

The outcome data, more specifically the individual profiles, revealed a "person x treatment" interaction effect, which is a common occurrence when atypically functioning individuals are engaged in training, as evident for example from research examining the impact of variable practice on ball catching (Przysucha et al., 2021). Thus, the variable practice implemented was effective for many, but not all children, in regards to movement effectiveness. Also, the fact that at the transfer test, the performance deteriorated suggests that "generalizability" of the respective motor program is still less than optimal. It is important to note, however, that all of participants improved their overall accuracy, indicating that even if a child did not record more hits, the errors associated with his performance where more in the desired locations. These positive changes were accompanied by spatial adaptations to the elbow and temporal parametrization via changes to angular velocity of the elbow, and overall increase in ball velocity at the instance of release. However, despite these positive changes, even the children who did improve were still not performing at the developmental level consistent with their typically developing peers, as evident from the developmental data (Schott & Getchell, 2021). Thus further enhancement of the underlying schema is required (Noghondar et al., 2021). One potential way of enhancing the effectiveness of the parametrization may be simply by prolonging the duration of the program. Also, since the degree of contextual interference implemented represents an important moderator in the learning process (Boyce et al., 2006), possible manipulations of other task-specific constraints, such as distance, may also lead to better outcomes. This manipulation would constraint the participant to adapt the absolute force of the throw, which is another important parameter of the GMP. Also, the role of augmented feedback, provided after the completion of the task, cannot be underestimated in this process. This kind of feedback usually involves information about the outcome or the quality of the movement, with the latter likely being more relevant in clinical settings (Wulf, Shea, & Lewthwaite, 2010). Augmented feedback may help to develop a reference of correctness that allows for better detection of errors. This approach may enhance the performer's abilities to plan and execute the movement, and generalize it to a novel context, which is the ultimate goal of variable practice.

Acknowledgments

References

Adams, D. (2001). The relative effectiveness of three instructional strategies on the learning of an overarm throw for force. *The Physical Educator, 58*, 67-77.

Allard, P., Stokes, I. A. F., & Blanchi, J. P. (1995). *Three-dimensional analysis of human movement.* Windsor, ON: Human Kinetics.

American Psychiatric Association. (2003). *Diagnostic and statistical manual of mental disorders* (4th ed.).

Boyce, A., Coker, C. A., & Bunker, L. K. (2006). Implications for variability of practice from pedagogy and motor learning perspectives: Finding a common ground. *Quest, 58*(3), 330-343. https://doi.org/10.1080/00336297.2006.10491886

Breidenbach, J. R. (2000). *Three –dimensional kinematics of the overarm throwing motion in children ages 2 to 7.* Unpublished thesis. University of North Dakota.

Butterfield, S. A., & Loovis, E. M. (1993). Influence of age, sex, balance, and sport participation on development of throwing by children in Grades K-8. *Perceptual and Motor Skills, 76*(2), 459-464. https://doi.org/10.2466/pms.1993.76.2.459

Czyż, S., Zvonař, M., & Pretorius, E. (2019). The Development of Generalized Motor Program in Constant and Variable Practice Conditions. *Frontiers of Psychology, 10*, 2760. https://doi.org/10.3389/fpsyg.2019.02760

Douvis, S. J. (2005). Variable practice in learning the forehand drive in tennis. *Perceptual and Motor Skills, 101*(2), 531-545. https://doi.org/10.2466/pms.101.2.531-545

Fleisig, G., Barrentine, S., Zheng, N., Escamilla, R., & Andrews, J. (1999). Kinematic and kinetic comparison of baseball pitching among various levels of development. *Journal of Biomechanics, 32*(12), 1371-1375. https://doi.org/10.1016/S0021-9290(99)00127-X

Fronske, H., Blakemore, C. L., & Abdenroth-Smith, J. (1997). The effect of critical cues on overhand throwing efficiency of elementary school children. *The Physical Educator, 54*, 88-95.

Gromeier, M., Koester, D., & Schack, T. (2017). Gender differences in motor skills of the overarm throw. *Frontiers in Psychology, 8*, 212-221. https://doi.org/10.3389/fpsyg.2017.00212

Hall, K. G., Domingues, D. A., & Cavazos, R. (1994). Contextual interference effects with skilled baseball players. *Perceptual and Motor Skills, 78*, 835-841. https://doi.org/10.2466/pms.1994.78.3.835

Halverson, L. E., Roberton, M. A., & Langendorfer, S. (1982). Development of the overarm throw: movement and ball velocity changes by seventh grade. *Research Quarterly for Exercise and Sport, 53*(3), 198-205. https://doi.org/10.1080/02701367.1982.10609340

Henderson, S., & Sugden, D. (2007). *The Movement Assessment Battery for Children.* Psychological Corporation.

Kadesjö, B., & Gillberg, C. (1998). Attention deficits and clumsiness in Swedish 7-year-old children. *Developmental Medicine and Child Neurology, 40*(12), 796-804. https://doi.org/10.1111/j.1469-8749.1998.tb12356.x

Kawamura, K., Shinya, M., Kobayashi, H., & Obata, H. (2016). Development of throwing accuracy in elementary school handball payers. *Proceedings of 34th International Conference on Biomechanics in Sports,* Tsukoba (Japan).

Larson, K., Stodden, D., Langerdorfer, S., & Goodway, J. (2013). Age and gender differences in adolescence and adult overarm throwing. *Research Quarterly for Exercise and Sport, 84*(2), 239-244. https://doi.org/10.1080/02701367.2013.784841

Mammert, D. (2006). Long-term effects of type of practice on learning and transfer of a complex motor skill. *Perceptual Motor Skills, 103*(3), 912-916. https://doi.org/10.2466/pms.103.3.912-916

Mandich, A., Polatajko, H., Macnab, J., & Miller, L. (2001). Treatment of children with Developmental Coordination Disorder: What is the evidence? *Physical & Occupational Therapy in Pediatrics, 20*(2-3), 51-68. https://doi.org/10.1080/J006v20n02_04

Matsuoka, O., Trigonis, J., Simakis, S., & Kioumourjoglou, K. (2010). Variability of practice and enhancement of acquisition, retention and transfer of learning using an outdoor throwing motor skill by children with intellectual disabilities. *Studies in Physical Culture and Tourism, 17*, 156-162.

Noghondar, N, V., Sohrabi, M., Taheri, H. R., Kobravi, H., & Khodashenas, E. (2021). Pre-programming in overhand throwing of children with Down syndrome: role of the GMP. *International Journal of Developmental Disabilities, 67*(3), 229-235. https://doi.org/10.1080/20473869.2019.1585693

Palmer, H., Newell, K., Mulloy, F., Gordon, D., Smith, S., & Williams, G. (2021). Movement form of the overarm throw for children at 6, 10, and 14 years of age. *European Journal of Sport Science, 21*(9), 1254-1262. https://doi.org/10.1080/17461391.2020.1834622

Payne, V. G., & Isaacs, L. D. (1991). *Human motor development: A lifespan Approach.* Mayfield Publishing Company. California.

Piek, J. P., Barrett, N. C., Allen, L. S., Jones, A., & Louise, M. (2010). The relationship between bullying and self-worth in children with movement coordination problems. *British Journal of Educational Psychology, 75*(3), 453-463. https://doi.org/10.1348/000709904X24573

Przysucha, E., Klarner, T., & Zerpa, C. (2021). Variable practice may enhance ball catching skills in some but not all children with DCD. *International Journal of Extreme Automation and Connectivity in Healthcare, 3*(2), 7-19. https://doi.org/10.4018/IJEACH.2021070102

Roberton, M. A., & Konczak, J. (2001). Predicting children's overarm throw ball velocities from their developmental levels in throwing. *Research Quarterly for Exercise and Sport, 72*(2), 91-103. https://doi.org/10.1080/02701367.2001.10608939

Roberton, M. A., Helverson, L., Langedorfer, S., & Williams, K. (1979). Longitudinal changes in children's overarm throw ball velocities. *Research Quarterly. American Alliance for Health, Physical Education, Recreation and Dance, 50*(2), 256-264. https://doi.org/10.1080/10671315.1979.10615608

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness.* The Guilford Press. https://doi.org/10.1521/978.14625/28806

Schmidt, R. A. (1975). A Schema theory of discrete motor skill learning. *Psychological Review, 82*(4), 225-260. https://doi.org/10.1037/h0076770

Schmidt, R. A., & Wrisberg, C. A. (2008). *Motor Learning and Performance: A Situation-Based Learning Approach* (4th ed.). Champaign, IL: Human Kinetics.

Schott, N., & Getchell, N. (2021). Qualitative and quantitative assessment of overarm throwing in children with and without DCD. *Journal of Motor Learning and Development, 9*(2), 266-285. https://doi.org/10.1123/jmld.2020-0056

Sherwood, D., & Lee, T. (2003). Schema theory: Critical review and implications for role of cognition in a new theory of motor learning. *Research Quarterly for Exercise and Sport, 74*(4), 376-382. https://doi.org/10.1080/02701367.2003.10609107

Stodden, D., Langendorfer, S., Fleisig, G., & Andrews, J. (2006). Kinematic constraints associated with the acquisition of overarm throwing Part II: Upper extremity actions. *Research Quarterly for Exercise and Sport, 77*(4), 428-436. https://doi.org/10.1080/02701367.2006.10599378

Wilmut, K., & Barnett, A. L. (2019). Movement coordination, control and skill acquisition in DCD. In A. Barnett & E. Hill (Eds.), *Understanding motor behavior in Developmental Coordination Disorder.* New York, NY: Routledge. https://doi.org/10.4324/9781315268231-4

Wilson, B. N., & Crawford, S. G. (2007). *The Developmental Coordination Disorder Questionnaire 2007 (DCDQ '07)*. University of Calgary.

Wulf, G., & Schmidt, R. A. (1997). Variability of practice and implicit motor learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 23*(4), 987-1006. https://doi.org/10.1037/0278-7393.23.4.987

Wulf, G., Shea, C., & Lewthwaite, R. (2010). Motor skill learning and performance: A review of influential factors. *Medical Education, 44*(1), 75-84. https://doi.org/10.1111/j.1365-2923.2009.03421.x

Yan, J., H., Payne, V. H., & Thomas, J. R. (2000). Developmental kinematics of young girls' overarm throwing. *Research Quarterly for Exercise and Sport, 71*(1), 92-102. https://doi.org/10.1080/02701367.2000.10608886

Yung-Hsien Huang, K., Ting-Yu Wu, H., Learman, K. E., & Yung-Shen, T. (2010). A comparison of throwing kinematics between youth baseball players with and without a history of medial elbow pain. *Chinese Journal of Physiology, 30*, 160-166. https://doi.org/10.4077/CJP.2010.AMK026

Zetoua, E., Papadakisa, L., Vernadakisa, N., Derria, V., Bebetsosa, E., & Filippou, F. (2014). The effect of variable and stable practice on performance and learning the header skill of young athletes in soccer. *Procedia - Social and Behavioral Sciences, 152*, 824-829. https://doi.org/10.1016/j.sbspro.2014.09.328

Being Beyond the Reality Principle Through Production and Consumption of the Self in the Digital Realm. A Bit about the Digital Created Self in the Shared Personal Life Online. Being Distantly Social and Distantly Present

Yana D. Nikolova[1]

[1] Independent researcher, London, United Kingdom

Correspondence: Yana D. Nikolova, Independent researcher, United Kingdom.

Abstract

Taking posting of personal events in pictures and text on Facebook as examples, the article discusses some mechanisms of production of the Self in a new form. Using the process of creating a constructed identity on a social media platform, the paper combines Jacques Lacan, Carl Rogers and Karen Horney in explaining psycho-socially how and why people create an imaginative version of themselves online. The Selves are produced in the digital according to specific needs and drives of their owners. The Other(s) (their audience) that consumes it, bring values and sense of worth by consuming it.

The main claim the article makes is that as a result of the communication between the Self and its audience (the Other (s) in the digital), personal values about self-worth change. As a result, self-identification with the consuming audience leads to self-actualizing and glorifying. This sets up the process of creating an Ideal Image based on chosen and hidden content. By doing this, the Ego, led by the Ideal, uses the views from the Imaginary that applies in the digital (the Symbolic order) to reproduce and keep personal narrative of identity going. Hence, an Ideal image is produced. Once produced, it starts to be consumed by the Others from distance that creates the illusion of fulfilment, even constructed in parts. This digital version of the Self experiences a life beyond the reality principle.

The last few years Facebook has become an area of creating digital Selves that are produced in particles, reproduced (with added pieces) and consumed by a chosen audience.

Keywords: the self, the other, imaginary, self-construction, emotions in the digital, Facebook, identity, self-actualization

"Nothing and no one exist in a world whose existence does not presuppose a spectator" ----- Hannah Arendt

1. Introduction

1.1 Introduction to the Digital Self

The digital space has recently become the area of being. In all aspects of life, the digital realm has provided opportunities for expression of different behaviour at personal and collective level. The Self as in individual active conscious knowledge of who the person is. Entering the digital world- this knowledge becomes constructed in a new way with the use of new practices, such as posting, commenting, discussing, liking, etc. These practices make human Selves objects of their own desires and searches for self-values. Selves start to reproduce in a digitally shared images. On Facebook, for example, this production of an image is based on self-representation which *"strategically construct online personas that emphasize their most desirable traits"* (Vogel, Rose, Roberts, & Eckles, 2014). This occurs consistently in a few steps that follow one set of order, which is discussed in this article.

The purpose of posting pictures displaying personal life events (such as giving birth, marriage, visiting a place, loss of a beloved one, having a new job and many more) is no longer informing. This has become a trend that

puts a question about the reasons why people have a need to share their personal life events publicly and how emotionally authentic these events and people are.

However, simple sharing goes beyond reality because in the digital- it provokes series of happenings in the human mind that do not serve the human Ego only. A shared text (about any personal event) posted starts receiving comments, GIFs and other emoticons. It narrates a life event. It constructs the way of how a person wants to be seen by the Other(s). It becomes a conscious process with unconscious routes, from which self-satisfaction and self-recognition are gained. These gains produce pleasure. So, it becomes a mental process that develops a *"tendency towards the pleasure principle"* (Freud, 2015). With repetition of posting, the pleasure principle becomes a conscious action. However, this same action in the digital world can overcome *"the reality principle"* and becomes a *"perception of pleasure"* by *"unsatisfied instincts"* (Freud, 2015). Human Ego does not try to block these instincts. It neither controls the impulse for gratification. Instead, with the support of imagination, it responds to these impulses by serving the urge for gratification in a socially appropriate way applied to the digital.

Yet, in order to maintain reality, the Self enters the digital realm where it starts to live another life- the life of the self-constructed and self- represented chosen image. The self-representing activity of posting pictures becomes a reaction from instinctive demands (survival, reproduction, etc.) within the mind that may be placed in a conflict by any external or internal processes (in a conflict with 'Who I am really'). Examples of instincts come from forming an online profile with the aim to fulfill sexual needs and formation of business profile with the aim to maintain income for survival purposes. In any way, these instincts are not easily controlled (and when also combined with the urge of gratification), they often rise above the reality principles because they start to gratify pleasure of all sorts. This process becomes a mental activity- activity that takes place in the mind, but it manifests in a form of a personal post in the digital space, based on person's needs. At the end, the Self creates its digital version.

This article explores the instruments and internal reasons of the creation of identity in the digital reality. The article claims that this identity has its own life in the digital realm, but aims to serve the needs of the real Self in the physical realm. It explains the produced, narrated, re-produced and consumed version online that makes people distantly social in an imaginative world of always present Selves.

The article contributes to existing literature on the digital and fills the gap of explanations about the psychological motives and social mechanisms that help people to find their new Self (identity) online. The work also provides an example of a link between the phyche and the social environment and their endless interconnectedness that adds to the understanding of the influence of the social media.

2. Construction and Production of the Self in the Digital

Looking at Facebook as an example, social media offers space for production of knowledge, stories, news, people, histories. All of them become produced by using a *"mnemonic function"*. Mnemonics are in forms of images, short factual text, songs, rhymes, poems, phrases, numbers, sentences, or the combination of all/some of them in a post (Artamonov, Volovikova, & Tikhonova, 2019). The tool kit of mnemonics is used cognitively for memorising. But also- for producing online content. Combining a text with an image creates a new mental representation. Every individual can form his representation using chosen visual images. The Facebook profile picture is an example. It has meaning and an aim for the owner. Often, it represents an emotion, a momentum of mood, attitudes, or even political orientation. It is usually a picture of a personal life event, but it is self-produced and self-chosen to be there. The same with any text. Users of Facebook can choose who can see the posts and the information shared. Every post is a little part of a whole self-narrative. The process of construction and production become entirely personalized. Construction is made of bits and pieces, with the use of combining digital tools where each post is a narrated self-expression of visions and emotions that form the image of the Self. This image in produced in parts- posts and statuses. Both become an *"authentic source of self-expression"* (Chung & Kramer, 2011).

As the person choses how to construct his representation, this becomes a mental image that may be a response of an *"inner dictate"* which comes from his Self. The Self is the cognitive representation of own identity. It can be seen in a digital version as this article explains. The Ideal Self, in Lacanian meaning, comes from childhood as a sense of wholeness that creates an Ideal image of him, which does not correspond with the physical reality. Lacan thinks this version is not attainable. That is why this article states by entering the digital world, humans attempt to create this Ideal version through imagination. With the engagement and means of the Ego.

Ego may aim to go *"into a being of absolute perfection"*, but this is formed and personalized in the way how it is desired to be. Therefore, the Self produces its version in order to *"fulfil his idealized image of himself and satisfy*

his pride in the exalted attributes which (so he feels) he has, could have, should have" (Horney, 1991), where the moments of "could*"* and "should*"* put the foundation of the self-production. This happens through the omnipresent form of imagination that takes the process of creation beyond the reality principle- beyond the control of the Ego because it starts to look for pleasure. Acknowledging the everyday life, the Ego enters the imaginary realm with reflections of life events from the physical. Not only what events realistically happened, but actually how the Ego wants them to be seen. Self-production starts to be made by the Ego in order to oppress its anxiety of the real. That is why it creates its digital version where everything is exactly how the Ego wants it to know and wants it to be. The product of this process is the creation of the digital Self. It aims to give a *"feeling of identity"* with the Ideal. Once it starts to be produced, through postings, it becomes consumed by comments from the chosen audience. And once this moment starts to *"give a feeling of power and significance"*, the imagination begins to develop an *"idealized image"* (Horney, 1991) that brings further characteristics of the Ideal.

The ongoing process of creating (by using the same tools- images, text, locations as part of mnemonics) sets up a pattern of production in the digital space that leads to a personal narration. This fulfils (and re-produces) inner conflict continuously through producing the Ideal virtually. This pattern is an established schema of construction and production in different forms, such as status updates, new postings, new personal life events shared from the account on Facebook as a social platform. The use of images, and videos allow visual representation of it whilst the posted updates, marked locations, maintained list of friends give more of social self-expression. This is because language constructs, produces and re-produces what the Self strives for in order to live in the digital, and thus to reach its Ego Ideal version- not the one that is, but the one a person wants to see, wants to know and wants to be.

2.1 How do We Create What We Create Online

As mentioned, the Self narrates in parts. Every single online post becomes a part. Each post may contain many different mnemonics. In the process of production, pieces are added, taken and hidden. Some of them are taken from the physical and added in the digital, some stay hidden in the physical and do not enter the digital space. Through this process, the digital Self builds its identity that starts to be narrated in words, images, posts, videos. This identity operates from the constructed Ideal Image that is consumed by the Others. It exists in any time and space. It communicates and interacts from distance. It lives from distance in its alienated form that becomes consumed in pieces. This is because the digital being becomes possible through the identification with the Other(s) that consume in pieces (posts). Thus, the owner of the Facebook profile starts to identify himself with his own knowledge and feeling about himself that is confirmed and consumed (through an emoticon, comment) by the Other(s). All of these takes the individual beyond the Reality and its principles (in literal and non-literal meaning).

Self-construction offers opportunity to form exploration of the internal drives. Looking into the layers of the Self – the order of the personal narration in posting, images, text, markings comes into consideration. Imagination can be seen in the process of creating and producing the ego image. Self comes in a form of a message sent to the spectators- 'Look at me who I am and how I live'.

With this, the Self dives into the dimension of the Lacanian Imaginary where it can *"solve inner conflicts through an act of imagination"* (Horney, 1991). Production in postings forms the whole narrative of the Ideal. Self-representation (based on choice) creates a self- discourse that the Ego uses to constructs its Ideal. It creates and narrates the Ego's desired Ideal life in the digital, internalized in the physical. This confirms that the Ego relates to its image. It also aligns with it and continues to build this Ideal version online. And being in the digital, creating its own narrative, the Ego creates a discourse- a way of being seen and accepted online. Hence, there are moments of personification by using pieces of life in the physical realm which, once joined together, they construct the *"much needed feeling of significance"* (Horney, 1991).

By crossing the borders between physical and digital through posting pictures from a chosen life event (such as becoming a parent, a party, a visit, a graduation, etc.), identity starts to be narrated. The Self reaffirms its constructed version through statuses, life happenings, responding to others, getting a part in discussions, being a member of online groups, and following certain pages of interest, etc. The more is the production, the more is the consumption. Within time, through producing and re-producing of this version, the Self increases its power, and it may become *"unlimited, with exalted faculties"*. Hence, it goes beyond the real and becomes *"a hero, a genius, a supreme lover"* (Horney, 1991). It can achieve multiple "successes". For example, becoming a professional (coach, therapist, influencer, blogger, etc.), a valued citizen, a good parent, a beloved individual, etc. These are

created sides that can construct a happy digital being that exist firstly in its own perception of happiness and secondly- in the space where it can be created and proved by Other(s).

According to Karen Horney, *"the idealized image becomes an idealized self"* (Horney, 1991). The way of becoming is through the idea of how the others see the Self in the particular social (digital) setting. As Facebook is the most common "book" of created "faces", through the status update, language expression and event share have become cues of psychological state of being. They reassure, reproduce, and reaffirm. The image has all the chosen and given characteristics and feelings that the Self uses to live its desired version. This version is its Ideal.

Once, coming to the digital, the Self starts producing and consuming whilst the Ideal Self enters a period of 'being produced and consumed. There, the audience takes part in the role of the Other(s). Nothing can be consumed in the digital realm without the figure of the Other. The Other provides acknowledgement of attitudes, beliefs, emotions that may be directly expressed in a comment or indirectly through the use of emoticons in order to prove or disprove. If the comments are not proving, there is the option to switch them off. This reinforces the chosen version of the Self to be narrated even more. Moreover, the interaction between Self and Others is unlimited of time and space. That is why it goes beyond the reality of here and now. It can enter the imaginary realm, where the consumption comes initially with unconstructed time, but with a constructed space – the individual Facebook profile. The profile becomes an individual being with a space of the Self with no fixed time periods. The audience (the chosen Other (s)) also consumes it at its convenience.

3. The Self towards the Other in an Order-Ed Consumption

Production and consumption will not be possible without the figure of the Other(s). Audiences (the list of friends and people who follow) that consume the shared information are also chosen by the Facebook profile's owner. This happens in few main ways: giving a public or private access, personal friend's list (that can be visible or not as well by choice), and restricting comments. The audiences serve as *"tele-co-present others"* (Zhao, 2005) that develop the relation with the Self of the owner. And these *"tele-co-present others"* can mirror the constructed Self through the responses given in any form.

The responses from Other (s), however, are not only a sign of consumption of the Self (in the way how it is organised). They can also reinforce more action of sharing-posting. This is because the digital has distant contact. A person can desire how the Others view, perceive, and see his body, feelings, thoughts, lifestyle and overall being. Hence, the person enters the Imaginary through producing more of the Self in its desired presented version (the Ideal) to receive wanted reactions, emotions, and feelings. The more the Self is consumed, the more is produced. The high consumption may force the Ego to react to the perceived opinions that come from the Other (s). Often, this can increase to wishing to produce and re-produce more digital postings so that the Ego puts pieces of the Self together that are narrated in an ordered way - one comes after another on a theme. Example is posting a life event of becoming a parent, which is followed up by postings of parenthood, personal family, children, birthday gatherings, etc. The content is confirmed (and consumed through comments or emoticons) by the Other (s). And the order is maintained, bringing themes around the main one 'I am a parent'. The role of the parent is internalized after. The same with another example- becoming a life coach, which is followed by many events about coaching, workshops, content related to psychology and etc. The event is attended and seen by the Other (s) This role of a coach is also internalized. And the order goes on, bringing similar themes into the main theme 'I am a coach'.

When sharing personal life content on Facebook through the self-created profile, the pattern of self-presentation needs to be considered in relation to the interaction with the chosen audience. According to Zhao, the digital Self is not separated fully from its non-digitalised version (Zhao, 2005). That said, the Self is presented in chosen parts and types of posted information. And, through different profiles. Thus, each Self can find some of its own aspects in many profiles (or posts) mirroring different audiences that consume what is presented. This proves the trend of individual's tendency to have a *"narrative in nature"* (Zhao, 2005). This means Selves can be creatively *"crafted"* and *"multiplied"* (Zhao, 2005) in content, attitudes and emotions.

The presented parts can be seen into taken conscious parts of the human psyche. As verbal face-to-face symbols (speech) cannot be used in the digital, the ones that replace them are language, text and images. Thus, the digital Self is presented in a limited way, dictated by a particular digital setting that offers different tools of presentation (text, images, tabs, hash tags, emoticons, etc.). The pattern of the conscious self-representation and self-production appears as consistent, or it can be traced in writing (statuses, emotions through emoticons). It forms a consistent prescribed modes of consumption by the audience that identifies the way how the Self (or its version) is expressed. This suggests identification with text posted, an image placed, a location tagged in, an opinion

shared and etc. The identification may happen at any point on the line of shared emotion, shared opinion between the audience and the created Self. Therefore, through the identification with the Other(s) (that actively consume different versions) digital Self, it starts to live in the Imagined, but not in the Real. The Ideal Image of the Ego finds its arena for living, either produced in posts or multiplied in profiles.

However, the main way of how the Self is produced is through text. Text contains language. Forming a textual message is a cognitive process. Cognition is part of the conscious mind. Hence, expression the Self through the text is a conscious action. But the underlined force during this process is hidden. It can be unconscious. In the text, according to Lacan, *"the subject"* (the Self) constructs its *"unique telling position"* (Parker & Pavon-Cullier, 2014). In this position parts of the Self (or the whole Self) can be *"symbolically represented"* (with the use of an image or an emoticon in the post, for example). It gives a structure into the process of production where Self can exist.

3.1 The Self as a Subject of Language in a Facebook Profile

In each Facebook profile, the constructed story makes the Self predominantly a subject of language. And as such, it *"generates particular truth"* of its personal knowledge. Thus, it generates knowledge, through which Self becomes able *"to generate reality"* (Parker & Pavon-Cullier, 2014) as it is possible to imagine it and to feel it in the digital. One shared event from the personal life (date of marriage, birth, honeymoon, engagement as well as dates for online virtual meetings-workshops) starts to *"function as a mechanism to the symbolic system"* that serves the Self as a *"sort of device"*. This device can *"restore and reinforce"* (Parker & Pavon-Cullier, 2014) the story (representation) further. Hence, like a bridge, it *"transcends"* the system beyond the reality principle where he starts to serve emotions and internal needs. Then, the Ego leaves the control of the impulses and starts to adapt to the digital world and its generated reality serving the inner needs around the Self.

According to Carl Rogers, the self-concept is the set of ideas, attitudes, opinions, and beliefs everyone has about who they are. It sets up the way how the person sees themselves. It is represented in an image that everyone has inside. This image is created in certain conditions such as personal events, happening, attitudes, emotions out of an event, etc. Some of them are chosen to be displayed (shared). Some stay hidden from the audience. It depends on what is consumed the most. This forms a highly personally constructed discourse. Indeed, the idea of the Self and its image become highly subjective too. Moreover, the image is expressed through the personal discourse view that can be seen in the post written comments and the chosen pictures shared with the audience. Furthermore, it is organised in an ordered manner, according to the personal events in the individual's reality. It can correspond to moments of attitudes, emotions and opinions provoked by the importance they have to each Self. This importance forces manipulation of personal information- the choice of some events to be displayed and shared and keeping others hidden. This importance can be projected both into and onto the Ideal Self. It finds its life in the narrative (the pattern of presenting) in the digital realm. The projection can find its expression in the vision of Self that the Ego has so it can reach its Ideal.

The manner of presenting is influenced by selecting what to show and how to express it. The first one relates to visual content, but the second to the linguistic one. On a specific theme, both form the self- presentation. Then it becomes narrated. This narration becomes part of the self-concept. However, here again the figure of the Other(s) appears as internalized identity that makes its thematic construction, production, and consumption a public process. The digital realm is one of these places that provides tools for construction, production, and consumption of identity. Text and language are two of these tools that narrate the digital identity. As explained by Stone (1981), the identity can be *"placed"* and *"announced"* in order to be *"established"* through *"coincidence of placements"* (Stone, G., 1981). In the digital realm this happens easily with manipulation of words, pictures, emoticons that aims to produce the desired version *"detached from social encounters"* (Zhao, Grasmick, & Martin, 2008) with the audience so that it can be born in its digital *"disembodied"* form.

Living in the Imaginary by existing in the Symbolic order (internet, Facebook) beyond reality may represent the Ideal Image of the Self, aiming to reach the state of the Ideal. Usually, the construction of identity in the digital setting has its forces from the social events that happen to the individual. Events such as becoming a parent, marriage, engagement, moments that bring status (such as vising universities, museums, embassies, hospitals, other famous place related to history or business, graduating, ending a certified course, winning a competition, etc.) become the visible part in the chosen shared knowledge. And through the use of particular words, these places and events are manipulated to get *"desired impression on the others"* (Goffman, 1959).

Events, places, images, texts are combined together in a post to produce identity. But also to serve a need or an urge that is beyond the Ego's control. Without revealing all the information, physical encounters, and happenings in the physical reality, but using a mnemonic function (combining few tools in one post to encode

information such as songs, videos, pictures, parts of poems, famous saying or citations), the profile owner starts to form the Ideal Image of the Ego. Language tells the story that this Image has. This slowly can progress to 'fantasized identity' with the use of avatars in order to meet virtually and *"interact in real time"* overcoming physical boundaries – an idea that Facebook plans to build in the near future (CNN, 2021).

4. Emotions, Needs, Wishful Thinking, Language. Behind Actualising in the Digital

Lacan sees that humans can experiencee something they miss. What they miss can appear as a desire. It can force an individual to behave from his own unconscious desires. For Lacan human needs are converted into desires. This is what makes the Ego unable to stay in its control of the pleasure. These needs can appear in wishful thoughts and imaginaries. Through sharing personal information in the digital realm, an unconscious instinct can manifest itself as a desire. It can then attempt to fulfil something. Hence, the shared personal life on Facebook through the created profile can fulfill a wish, a hidden desire, meet a need. Or, it can fill a gap of emotions. It can simply correspond to a cognition (memories, thinking patterns) in the mind that generates feelings. It can be a desire to feel and/ or to be seen in a particular way. And language (from the Symbolic order) is the vehicle that helps for this to be expressed, constructed, and experienced in the digital.

For Lacan, language has a creative function – *"enunciating"* (Parker & Pavon-Cullier, 2014). Enunciation is pronouncing. In digital form it is writing, posting, and sharing. The Lacanian *"act of the Word"* becomes the act of the Post. The post has its own distinct symbolic system through images, texts, emoticons, links, videos and etc. The moment of the construction of the post is, therefore, as an expression of the Self in the Lacanian sense of *"enunciating act"* online. The manner of Self-production of the Self in its Lacanian context is the *"articulated discourse"* that creates the *"entire imaginary reality of the Ego"* in which *"the Other is the mirror"* (Parker & Pavon-Cullier, 2014). In virtual reality, The Ideal image of the Ego does not only live within the production and the consumption of the facts. It also lives in the emotions around these facts because the human emotional world is not very separated from ideas, beliefs, and attitudes.

Digitally, emotions find their way of happening. They rise in the physical and may, then, be expressed in the digital. Digital is the new social that has a Symbolic order. Emotions and desires may be initiated in the digital and may be experienced in the physical. Anyhow, emotions represent an orientation in the environment and the world, *"both in relation to ourselves as individuals and to others"* (Tucker & Ellis, 2020). The digital gives individuals another area of social connections that form digital events. These digital events are made from the physical and with added pieces, they may form (or trigger) emotions and affects that together can construct *"the ways we experience the world"* (Tucker & Ellis, 2020). That is why emotions appear in a post through an image, a text, a link. They are visibly presented by an emoticon, which is a type of mnemonic. They can also be found in a personal comment that mirrors the post. They are live in and through the personal narrative- in words and construction.

Emotions may become a powerful force for identification between the created digital Self and the Others that form the audience. Thus, emotions *"constitutes analogic processing"* (Tucker & Ellis, 2020). And when sharing personal life events, the emotion is much deeper as it is related to an experience in the physical that finds its expression in the digital. And the construction may follow the emotion(s) that the person experiences (or does not experience) in the physical, but it can be created through the actual post in the digital in order to actualize the Ideal image. Sharing a personal event (such as giving birth or getting married, for example) has importance in the life of the individual with some degree of emotional input and value. At the same time, this event may trigger analogic processes in which may equate to *"represent arousal (amount of) and valence (type of)"* (Tucker & Ellis, 2020). This can captivate the space of the Imagined.

If an individual has an experience of fear, this can *"co-exist with (or transform into) one relating to excitement"* (Tucker & Ellis, 2020). If an emotion transforms, it takes the Self beyond the reality in the Imagined where the Other fills the missing pieces that the Ego desires to have. The figure of the Other in the digital realm steps into reaching the Ideal. In the Imagined, all the aspects of the emotions have an opportunity to manifest into the selected pictures, text, words, text, statuses, order, narrative. They construct the personal discourse that structures an event in posting for the purpose of the self- representation that delivers emotions. As a part of its identity, the formed discourse will be consumed by the chosen audience. With the use of Mnemonics, the Ideal Image starts to feed the urge that the Ego struggles to control.

4.1 Distantly Present through the "Looking-Glass Self"

As emotions take place in their digital form, it is important to see how they develop at first place. The concept of *"looking-glass self"* can be used to explaining the creation of the digital Self that represents the personal self-perception, which come together with a narrative of posts and behaviours in the digital space. In the

meaning of Cooley and with consideration of social part of the mind, *"the looking-glass self"* describes how people's identity is based on how the others perceive it. Therefore, the reactions of others in the digital socialization define and determine the Self and its social (digital) appearance (Cooley, 1902).

Facebook provides tools from the virtual realm to actualize the Ideal Image. It also facilitates conditions that offer a great choice for constructing (such as images, text, videos, links, compositions, options for increasing or decreasing audiences, etc.) - what is desired to 'be' and what is desired to 'feel'. Both fulfil human needs. The construction, however, includes imagination. In psychiatric literature imagination is related to wishful thinking. While being in the digital realm, it can progress to a feeling that may be *"determined not be our wishes, but by our needs"* (Horney, 1991). These needs can find its satisfaction in the *"curation of the self through the social networking"* and how this *"has mediated the emergence of the online profiles"* (Ibrahim, 2018). Therefore, needs such as self-love, self-esteem, self-acceptance, self-worth can find their examination in the narration of the Facebook profile, through sharing of personal events in a chosen, by the individual, way, according to his needs. Accepting and confirming the shared events through emoticons, comments, discussions, the audience (the Other (s) becomes the foundation for the *"looking-glass self''*.

However, the needs are related to Others. At the same time they are related to a desire, which, in the perspective of Yasmin Ibrahim, is a *"notion of desire- its own and that of the others"* (Ibrahim, 2018). Being related to needs, it may lead to a pre-occupation with the own created image, especially if this image brings emotions that serve the Ideal. All of this happens *"seeing oneself through the perspective of the others"* (Ibrahim, 2018) where desired emotions may come up in the process of consumption of digital Self by the audience. In this sense, a post that uses pictures from personal events (such as giving birth, marriage, attending an event, being with a particular person that has a value, etc.) makes the Self *"to be inserted in these composition"* (Ibrahim, 2018) that the post has. The composition can be emotional. It has a moment of choice – choosing what exactly, how, in what order, to satisfy a need. This is because the chosen images (accompanied by a text sometimes) in a post, *"are consumed by the self and others who have an implicit understanding of those conventions of the everyday"* (Ibrahim, 2018). To an extend this means the chosen audience is already informed about the events prior to the shared one and the share is known already.

The *"looking –glass self''* is also emotional identification between the Self and the audience happens (and becomes stronger with each post) through the emotions constructed, shared. When the emotional message is sent to the audience, it is consumed and thus, people easily 'click' with the post, once they identify with something (emotions, opinion, status). Moreover, each post, becomes a *"part of self-representation that entails creating personal content"*. In brief, the image *"turns into performative"* (Ibrahim, 2018). It shares personal life moments in which the Ideal image lives its life once the Self is inserted in the whole composition and emotions on the created post.

4.2 Discussing Digital Identity

Literature often discusses the role of motivation, motives, and desires and if they can answer the question about what draws individuals to spend a lot of time online. The main area of research is concentrated on professional networking, online marketing, ways of representing products, impression formation, online dating, etc. The emergence of the digital Self is also discussed. However, questions related to what draws individuals to create their digital identity and how, by doing this, they stay beyond the Real, remains unanswered. That is why this article has mainly the aim to fill the gap in describing the state of mind behind the mechanics and actions in the digital. Therefore, two moments could be discussed and seen mainly from the theories of Carl Rogers and Karen Horney in relation to production. Further, Lacan joins with explanation of the importance of the figure of the Other in consumption.

One is related to receiving satisfaction and the other is related to the role of imagination. However, both bring conditions of worth. But conditions are factors that facilitate human reality. In Rogerian meaning, applied to the digital, these are external factors that bring value to ourselves and measure self-worth based on personal abilities to meet the personal conditions, placed by humans on themselves. Therefore, posting becomes part of a *"organismic valuing process"* that the *"inherent tendency"* for actualizing creates the direction for *"receiving positive regard or love"*. Or at least developing conditions of worth by establishing a behaviour in the digital that is *"an organized whole"* (Proctor, 2017). Actualization here is the full development of one's Self in the version the person desires to be. This explanation brings the contribution of this work to the literature in the field.

And as Facebook profile provides an environment that is *"constituted by the human perception of it"*, it becomes the main space where a desire is fulfilled *"regardless of how it relates to reality"* because in posting- this reality is not fully revealed. Moreover, with language as a part of the Symbolic order, the digital identity that the Self

creates starts to operate in the constructed posts that sent emotions to the Other (s). Their *"feedback"* keeps the organism *"on the beam of satisfying his motivational needs"* that may be related to the instinctive desire to stabilize the image. That is why it needs the guarantee of the presence of the Other who gives *"a condition of worth"* when *"the positive regard of a significant other is conditional, when the individual feels that in some respects he is prized"* (Proctor, 2017).

Keeping personal narration thematically in posts and reproducing the same sense of Self, the profiles' owner leads the audience *"toward positively valued experiences and avoidance toward negatively valued experiences"* (Proctor, 2017). This creates one-sided *"environment which for theoretical purposes may be said to exist only"* in the human, *"or to be of his own creation"* (Proctor, 2017) in order the Ideal Image to bring worth and importance back to the Ego in the physical. This moment gets very close to the Lacanian symbol of **F** in the restless image. And again, based on Lacan, this image can get stabilized by the Symbolic – internet, Facebook, language, images, etc. And from the look of the big Other. This identification with the Other (in the process of consumption) serves exactly a purpose- to stabilize the Self through the text and images in the digital. However, there is something beyond the stabilization of the Self and its shared and consumed emotions. And this is the drive that forms the motivation for stabilizing.

According to Freud's views on repression (1915), the life drive seeks satisfaction that can find limits of expression in the society or from some areas of society. The drive can be examined in many areas of life, including socialization. As the social media is an area of socialization, it is logical for the drive to find its place there. Sometimes it can fully blossom there. Freud sees the Ego developing alongside learning how to control the impulses (drives) and their transference to the others in a social environment. Adding to Freud, Karen Horney sees the drive *"compulsive"* in nature. The nature *"stems"* from *"self-idealization"* that is *"neurotic solution"* (Horney, 1991). In the view of Horney, the drive goes toward a desire for *"glory"* that is *"hidden"*. Then the individual may develop a *"trend"* of acting out the needs in order to satisfy the *"search for glory"* (Horney, 1991) with examining an emotion coming from within or getting emotions in responses from the audience. As Horney thinks, the most important fact is what the individual *"is driven on the road to glory"* (Horney, 1991). Therefore, another important characteristic of the compulsive nature of the drive is *"its indiscriminateness"* (Horney, 1991).

This means the Self must be in the *"centre of the attention"* being *"the most original"*, *"the most attractive"* (Horney, 1991) in the image (role) that the individual has chosen to present in a particular post. And this image (role) needs to satisfy the audience- the Other that consumes this Image. This is an Ideal Image created by the Ego, driven by *"self-idealization"* in which the imagination plays a central role in creating with the use of text, filters, emoticons, images, videos, etc.) The digital (Facebook, for instance) is a social environment where the life drive can lead to achieving a self- glory. It can go through different postings, but also in the created and followed by the self- narration. In the narration (that is part of a search for glory), the Ideal Image of the Ego can actualize through the imagination.

According to Horney, imagination is *"the instrument in the process of self-idealisation"* (Horney, 1991). However, the imagination brings some unrealistic elements and *"no matter how much a person prides himself on being realistic, no matter how realistic indeed his march toward perfection is, his imagination accompanies him and makes mistake a mirage for the real thing"* (Horney, 1991). This explains why the construction of the digital Self that actualizes the Ideal image of the Ego goes beyond the reality principle. The imagination is related to *"wishful thinking"*. This thinking may appear in the post through the order of the text, chosen words, chosen pictures and digital tools, driven by the inner desire of the individual to satisfy a need. For instance, it may aim to *"brush off pain and suffering"* (Horney, 1991) in the physical realm so that it can operate in *"changing the neurotic beliefs"* (Horney, 1991).

So, by constructing a digital Self and by sharing information in each post to satisfy a need, the individual may *"discarding all the disturbing evidence"* from the physical, constructing it in the digital. And this gets into *"distortions of inner and outer reality"* (Horney, 1991). The main aim here is to avoid the negative feelings (such as pain) and hence, to actualize the positive in its Ideal form. Then, the individual may lose his capacity to face reality, but he will go beyond the reality principle to glorify himself in his Ideal Image of his Ego.

5. Forming the Ideal Image of the Ego, Beyond the Real

According to Lacan (2006), during the Mirror Stage, individuals begin to know themselves as "I", creating a difference in the self-image. The "I" comes to be objectified by the identification with the Other in a *"dialectic form"* (Lacan, 2006). Hence, when language comes to play a role, the "I" becomes an object. Then, for Lacan, the "Ideal I" forms. It *"situates the agency called Ego"*, but *"prior to its social determination"* (Lacan, 2006),

through language. Therefore, the "I" is mentally positioned, but it finds its composition in the human physical body. And the images start to function in the *"relationship between the organism and its reality"* (Lacan, 2006). Considering the presence of the dialectic form, this links the "I" with a range of social situations, such as being on Internet, writing a post, sharing a private event digitally. In them, the "I" may find its Ideal version through the work of the Ego to stabilize the Self.

Lacan thinks that the Ego has its critical phase of development. It is explained in relation to an external image of the body that is produced (reflected in the mirror). This image triggers a mental representation of the "I", which is cognitive. It develops with thoughts, imaginations, visions about the "I", etc. They can form a perception of the Self, with which the individual identifies. Following Lacan, this image of united body that the individual identifies with, does not accord with undeveloped physical body. The result of this mismatch finds its expression in the Ideal towards which an individual strives to actualize throughout his life. This actualization can take place digitally.

This striving in life relates to the Ego a lot as the Ego becomes dependent on external objects and on the figure of the Other (the Others). This can lead to developing of the Rogerian external locus of evaluation, through which individuals make a "value judgement" about themselves. It is based on external factors such as environment, presence of Others. Thus, they *"introject the value of the others"* into the concept of the Self. This is an examination of introjection as defence mechanism of the Ego that looks to satisfy the need for self-worth. Relatively, Rogers links this moment with *"conditions of worth"* (Rogers, 1957), which give the feeling of how much people are accepted and wanted as what they are.

Taking the conditions of worth that each individual experience in childhood, the Ego may become dependent of external people and objects (such as Facebook and the chosen Others in the consuming audience there). At the same moment, the Ego is involved through introjection *"in which people are motivated to demonstrate ability (or avoid failure) in order to maintain feelings of worth"* (Ryan & Deci, 2000). Introjection (which means self-assimilation) is part of the formation of the Ideal image because it relates to *"extrinsic motivation"* – it *"refers to the performance of an activity in order to attain some separable outcome"*. Moreover, *"extrinsic motivation is regulation through identification"* (Ryan & Deci, 2000). This identification is within the social relations and communications.

Communication and social connecting happen through language and the other tools from the Symbolic Order. That said, the figure of the Other may be seen within the social and linguistic construction. And this construction (having already external locus of control in place), can form personal characteristics. They can facilitate identification with the image and its scenario of self-presentation. Lacan explains the Image as seen by the individual in identification with the Other. The identification can happen with the look in the mirror or in the image of the caregiver in childhood. And this image in the digital becomes dependent on the external Other(s)- the audience.

As the individual enters the external Symbolic world (online or/and offline), he discovers and engages with the symbols (codes, words, language, text). However, this world is already pre-existing. It is pre-existing because Facebook and internet for some is before their birth. This Order is understood through cognitions- mental pictures (thoughts, views, opinions), particular schemas (ways) about everything that happens around. Lacan thinks that the Ego has an imaginary nature as humans are interested in their image (Lacan, 1989). When having a mirror (this equals the figure of the Other in the digital), the individual may explore the connection between them and their image. Therefore, the mirror develops a sense of self-identity (Facebook profile as the digital appearance/ look of the Self) and the individual sees himself externally. If this 'mirror' is replaced by the figure of the digital Other- the individual can see himself in the audience's reactions, from the response of the Other (s) to the extent of which- the more this external view is positive and fulfilling, the more it is craved. The craving does not come from the self-identification, but because of the self-recognition which produces the fascination and creates pleasure as a result of it.

Further in explanation, as the formation of the Ego, for Lacan, is happening when an identification with the external happens, the Image of the Ego becomes an Ideal because there is a mismatch between internal and external reality. For instance, when the created digital Self does not correspond with the real Self and then the image becomes an Ideal image of the Ego towards which there is a constant attempt for achieving. This achievement can come through posts where specific life events (such as becoming a parent, marriage, vising a location, representing a job or a professional status, etc.) are shared in a constructed individual way. But the aim is to reach unity. Moreover, the Ego creates its image through Facebook profile with which as an instrument of the external, the Self starts to identify and gets recognition. The recognition comes from the responses by the

Others that feed the Ego, whose identity is captured by the idealized images and fantasies about the Self being with a partner (using tags), displaying the emotions around this shared life event in text with emoticons, marking the location, etc. Hence, creating a personal digital event that originates from the physical.

5.1 Sharing is not Always Caring

Some moments can be shared. Others not. The shared moments usually aim to *"selectively allow content onto their profiles, post pictures, and descriptions of themselves in ways that best represent their ideal self-views"* (Vogel, Rose, Roberts, & Eckles, 2014). Hence, reaching the Ideal, proved by the Others can come from Horney's *"search for glory"* (Horney, 1991) in which imagination is a tool for creating, shaping, forming in desired order. The *"search for glory"*, in Horney's view, goes *"into the fantastic"*, the realm of *"unlimited possibilities"* (Horney, 1991). This search start to happen by the needs, but not by the wishes, as imagination works for the Self from wishful thinking. In that sense, imagination gets the Self into the Imaginary realm (digital) where to actualize the Ideal image, an *"incessant labour"* needs to be put (Horney, 1991).

As imagination has its mental function, possibilities (such as *"hope, fear, believe, plan, wish"*) (Horney, 1991) are shown and on the way of self-actualization or self-glorification in the digital, the imagination is quite productive when building the Ideal image of the Ego in the personal narration. The more negative feeling is in the real world, the more positive content builds the Ideal Image in the digital world. This points is proven by a study has found *"viewing social media profiles with positive content was associated with poorer state self-esteem and relative self-evaluations"* (Vogel, Rose, Roberts, & Eckles, 2014). It may be concluded that, the Self may lose its reality by avoiding the negative and can become consumed with its idealization in which the Ego is absorbed by a constant production and confirmation of the positive. Then, the digital Self starts to live beyond the reality principle in the personal narrative that each Facebook profile has.

Because of this the individual becomes a product of addressing the external. And all from the Symbolic (mnemonics, language, structure) relates to the sense of social setting in the digital. As Facebook allows ways to organise a system of symbols. In this system the Self can constantly connect to many Others as external beings. Each personal Facebook profile becomes the Symbolic world where individuals can *"re-create their biography and personality"* (Zhao et al., 2018). The Ego manifests in the identification with the others, but it stays concentrated on itself. Therefore, the digital Self may be known and unknown to the audience as the Ego may hide and reveal, show and hide pieces of Self based on what needs to feel and fulfil.

In a similar sense, Zhao et al. (2018) describes two *"possible selves"* – the *"suppressed or hidden true self"* and the *"unrealistic or fantasized ideal self"* (Zhao et al., 2018). Both are part of the virtually created image of the Self that is known, shared to the others, being in the Symbolic and identified with them as external Others. In the case an individual *"may think that he or she has the potential of becoming a famous movie star, but it lacks an audition opportunity to show his or her acting talents"*, the profile on Facebook may become a good area for actualization of what is believed, but it is missing. By the same token, constructing a post about a personal life event such as marriage, becoming a parent, visiting a popular location) may actualise socially and emotionally what is believed (but it is missing in reality) through the Imagined.

Another example could be added, which has become a common trend is "becoming" professional in an area (such as therapist, coach, sport guru, promoter, etc.) where the person may have a little potential but may not have accredited (socially proved) education, knowledge and qualifications. However, individual believes in his potential and expressed his beliefs and self-visions in language, images, links, videos, life streams, etc. In order to actualize a *"hoped-for possible self"*. Or in other words, to actualize an identity people *"hope to establish but are unable to in face-to-face situations"* (Zhao et al., 2018). Therefore, the *"possible Self"* may be actualised with the use of chosen pictures, chosen words, constructed videos driven by imagination and wishful thinking in the Horney's *"search for glory"* (Horney, 1991). This is an explanation how through the tools of social media, the Ego works out the self-actualization of the Self in a more Imagined (created by itself) than Real (social approved) way. Hence, the credentials in each profile can be a product of the Ego.

In summary, the Symbolic world of language helps for a personal narration to be developed and the presentation of the Self in the digital to follow one line that identifies with the Others in the same way. At this point, the digital Self may start to live entirely in the virtual space in its unrealistic Ideal form while fully detaching consciously with the *"supressed or hidden true"* form. Therefore, the Symbolic setting on Facebook can create the Ideal Image, beyond the reality principle.

6. The Digital Self in Parts: Being Distantly Social and Distantly Present

When the digital Self is created, there is a moment of *"depersonalization"* (Caffrey, 2017). It happens when the individuals interact with social groups in a social setting. The development of identity in the digital is related to communication with the Others and *"managed through direct impression"* (Caffrey, 2017). Moreover, *"sociometer theory—suggests that a person's self-worth is primarily derived from the feedback they receive from others"* (Vogel, Rose, Roberts, & Eckles, 2014). The identity in the digital becomes alive through the responses from the Others in responses under a particular post. However, the Others become the main engine that runs the digital Self by affirming their self-view in the personal narrative.

As, according to the symbolic interactionists, the *"self has its social nature"* (Mead, 1934), digital Self constructs through its online identity *"desired impression of the others"* (Goffman, 1959). Being online the Self starts to exist within the context of the personal posts and status updates and tags. It is everywhere in a different form of presence, but never fully present in a whole because this version of the Self is freed from its physical component once it enters the digital. Thus, the space of interaction with the Others on Internet is *"fully disembodied"* (Caffrey, 2017). The Facebook setting creates environment that allow differentiation and fragmentation of the whole. Therefore, the digital identity can be produced and consumed in parts- small fragments that contain an important bit essence from the whole. Each fragment may have different story and importance for its owner and that is why it can be presented in specific way, through different tools such as comments, emoticons, other words, links, videos, images. Every part can be a post, with text only. It may have a word with many pictures, it may be a status update, or just a link of a song that clicks with the current mood of the individual. Through sharing, this forms interpersonal communication between the Self and the Other.

Once a post being responded through being liked, disliked, with a comment or emoticon, the shared part becomes affirmed by the audience because this indicates that it has been consumed. Then, the consumption becomes visible (let's say with a like, emoticon, comment) and goes back to the profile owner who starts to internalize it. Internalization occurs through introjection of being identified with the emotion that the symbol, comment or the whole post brings. After that, carried on further until the next piece of the identity is produced. And this process comes in few steps in the same way how the actual posting comes with picturing the life event, choosing the pictures that will fit the best the Ideal self, being liked and responded (therefore, consumed) by the chosen audience. And finally, after the created part is consumed back by the individual, the process gets into a psychoanalytic level where introjection leads to self-affirmation, self-interpretation on the way for the self-glorification- to reach the Ideal.

However, being in the digital, the Self-concept becomes consumed from distance. There is distance through the device. The device is the entrance to the digital realm. By being known, seen, responded, commented, the Self examines episodic interaction with every comment and every post. Moreover, it can be further built-in parts with additional posting, creation of event (usually webinars, life streams, etc.). However, it is *"constructed under a unique set of constraints"* from a distance. The device puts a wall. Therefore, the process of constructing and producing identity is distant, but it performs an action of escaping from *"real-world restraints such as social norms, legislation and responsibilities"* (Hu, Zhao, & Huang, cited by Caffrey, 2017).

By entering the digital by keeping a constructed narrative in the personal Facebook account, the digital Self (with the use of digital tools) facilitates *"enhancement"* of some *"narcissistic qualities and the cultivation''* (Caffrey, 2017). And by being consumed by the Others, the *"internal influences on the self are becoming externalized"*. Thus, using chosen tools, words, pictures, events to be presented online, on choice, the Self *"becomes externalized"* (Caffrey, 2017) in the digital realm. Moreover, through the self-production and self-affirmation, the Self engages with self-posting of its Ideal version and this *"confirms the sense of an idealized self"* (Andreassen, Pallese, Griffits, cited by Caffrey, 2017). The comments from the audience, its emotional responses create self-reflection in which the Self is seen through the lenses of the Others, even though there is a whole reality that puts them apart- the physical reality.

In the digital realm, the Other is also disembodied, but it stays related. This is because the Other is relational, interpersonal, incorporated into the contemporary process of producing Self digitally. The Other is present, but estranged. He comes and goes in the digital in his own time frame because he can see a post when it appears in front of him. But this estrange-ness maintains the distance that creates space for *"primary ambivalence"*. Then, according to Lacan, the subject (Self) start to identify with the Other, according to Lacan. Slowly the Other (or the audience) begins to bring symbolic identification in the digital self-representation. And this connection Self-Other in the virtual world mimics the Lacanian *"double mirror device"* (Vanheule, 2011), keeping the effect of language and images.

6.1 Selves in Distance

With progression of every post or a comment, the perceived image of the Self starts to be produced in fragments. Doing this in the digital, the profile owner sees his new version. This version becomes Ideal through the imaginary. It increases the process of production and reproduction so that it forms the idea of the Ideal Image that the Ego makes distantly present through language and distantly social through postings.

The post creates the distance. In fact, through expression of feelings, thoughts, emotions, mental state in the text, every post is *"retroactive demonstration of the real subject who will have existed through the act"* (Parker & D. Pavon-Cueller, 2014) of posting a chosen content. It serves the Imaginary (in the perception) through the symbols (language, emoticons, etc.) used. The Imaginary is incorporated in the Symbolic because the Symbolic provides a setting and tools that the Ego uses in order to for its Ideal image. Furthermore, this image has sense of presence, being, existence visually in unfixed space, time and context. This is because they are part of the Symbolic that narrates the Imagined and serves the Ideal Image of the Ego. Language constitutes in the image, and it creates emotions around and within this image. Therefore, emotions are felt in the physical but expressed and experienced in the digital.

This proves the separated realms of physical and virtual, which an individual crosses and between which personal emotions shift. Such situation of being in the distance between two realms has a reason in the uncomfortable picture of the real. Refusal to face the real can come from avoidance of struggles, pain that prevent production of pleasure. In order to get that pleasure, the Self actualizes a chosen part in order to reach the Ideal. Any pain and struggle may bring the individual to reality, but not accepting the real is due to the search for the glory in the virtual world, in order to reach the Ideal.

The digital realm makes the wishful thinking happen by the imagining. Imagined is developed on few foundations around the self-worth. As identification is the base of consumption, through the consumption of the Self, introjected values come from the responses of the Others. They develop a sense of worth that are taken by the Ego in pieces, which gets fulfilment from the digital in the version it wants. It builds this version episodically and sporadically. It displays personal events from the physical reality, so the Self takes the meaning of the event and puts it as a part to the Image that the Ego generates. Therefore, posting about being a parent, husband, wife, daughter, a professional (self-employed jobs such as coaches, well-being specialist, healers and all claimed professions that are without a university degree) can be as much real as imagined and as much lived as created. But reaffirming this role (as real or imagined) in the Symbolic through producing content, the Ideal slowly starts to be reach, even from distance.

In summary, the created Image starts to live in language, in text, in posts. Its Ideal begins to exist in the relation between the Self and the Other where the subject forms an identity. And as this connection is significant and it is driven by the belongingness, the Ego becomes intersected by the connection with the audience. This develops an external locus of evaluation and it becomes a foundation of the personal narrative and the personal discourse. In addition, being congruent in producing and consuming the Self in pieces posted here and there, now and before, the Self reaches its Ideal. And the use of language and images in the Symbolic order not only form the pieces of identity, but also form emotions that are expressed, produced, and consumed. That said, the emotions keep the Imaginary going through the personal discursive practise of representation beyond the reality principle. This is a very much 'imaginary principle' that is forced from the drives, exists through the emotions, run by the desire and maintained by the Ideal. The Ego identifies with the Other (the audience) and as much as it gets positive emotion, existence and it is recognised, it can become a force for posting, sharing, being in the digital through indirect distant communication.

7. Conclusion: Beyond the Reality Principle in the Search for the Ideal Image of the Self

Computer-based communication occurs through an additional device disembodies communication between people. This forms a social phenomenon of existing in one transnational community where representation of 'who you are' (the Self) in all the aspects, can be constructed through the services offered by different platforms in the web. Using the tools that Facebook provides (language, images, links, live streams, etc.), individuals can represent themselves publicly by constructing a profile with limited or an open access, establishing a selected audience. This forms a closed system of communication between digital Self and the Other(s).

Each profile is constructed by the individual that choses its characteristics (name, location, profile picture) with an idea of *"why and how"*. This idea composes a personal discourse, produced through posts. Posts are the small pieces of the big idea. The idea is about 'who I am, what I am, how I am' and 'how I want to be seen'. The coherent postings that have consistency in the theme presented, become congruent with the idea of *"why and*

how" the Self constructed, needs to be. Thus, it keeps the narration of the Self developing, producing, functioning, updating.

The presence of the Self in its own narrative is visual (through pictures, videos, live streams), but not physical as there is a distance in communication established by the existence of the device. The virtual realm gives experience that is outside of body, but very inside the mind. This experience happens from a digital identity that produces, reproduces, and maintains its Ideal image. The image is well-controlled by the Ego which is led by the Ideal. The Ideal image is a product of the human imagination and it feeds the Ego providing values, worth, recognition, confirmation, and moments of glory. Emotions come to play around these digital events of being. It goes beyond body in reality when it enters the Imagined world of the Ideal views in which the Ego produces content in pieces and constructs different roles that explicitly feed implicit wishes. This implicit wishes look for the Other (s) to connect through language. Existing in the digital, the Ego finds the connection through episodic posts with chosen images, status and location updates so that the Ego gets what it needs from the Other (s) to manage its identity, to construct the Ideal image and to experience the state of self-actualization and self-glorification.

By crossing the border of the physical, self-representation functions through the Symbolic order. This facilitates the process of production which is embedded in the communication between the Self and the Other (s). Particular characteristics and events of the individual are chosen and presented. Some of those could have potential in the physical, but if they are not actualized in eligible way there - they become able to be actualized in the digital.

Each profile choses to identify with other profiles (based on physical relationship, status, opinion, hobbies, etc.). Thus, the Facebook profile becomes self- produced, high individualized image of the Self presented by parts (word, link, video, status update) and in parts (episodic postings). These parts are consumed through the interaction between the Self and the Other (s) established by the Symbolic (digital) order. The more the profile is active, the more is consumed. The more is consumed - the more the Ego desires to produce it. Then consumption can be extended in chats, forums, live streams, online zoom meetings, etc. With this extension the digital Self becomes even more fragmented, but widespread, flexible, plastic that strengthens its Ideal image.

Communication between Self and the Other (s) confirms the image that the Ego takes as universal. The maintenance of this image works for the self-actualization and self-glorification in its digital version. Reaching the Ideal is framed by the Imaginary. As a result, internal needs are immediately met, becoming a profiled part of a social platform such as Facebook. Paradoxically, Freud's ego acts according to reality principle, but in the digital reality through the construction of Ideal image, the Ego goes beyond the real and *"determines"* its *"entire imaginary reality"* (Parker & Pavon-Cuellar, 2014) where existence, being and functioning are distant processes that question their authentic real happening.

Disclosure

The authors do not have any conflicts of interest to report.

References

Ahmad, N., & Tekke, M. (2015). Rediscovering Rogers's Self Theory and Personality. *Journal of Educational Health & Community Psychology, 4*(3), 28-34. IIUM, Malaysia.

Artamonov, D., Volovikova, M., & Tikhonova, S. (2019). Media memory in the digital world. *SHS Web of Conferences, 72*(APPSCONF-2019). https://doi.org/10.1051/shsconf /20197201014

Bailenson, J. N., Patel, K., Nielsen, A., Bajcsy, R., Jung, S., & Kurillo, G. (2008). The Effect of interactivity on learning physical actions in virtual reality. *Media Psychology, 11*(3), 354-376. https://doi.org/10.1080/15213260802285214

Baker, Ch. (2021). *Emotional Responses in Virtual Reality Environments.* Liverpool. John Moores University, UK.

Buongiorno, F. (2016). The Digital Self: The Construction of Self and Social Recognition in the Global Digital Society. Athens: *ATINER'S Conference* Paper Series, No: CBC2016-2189, Greece. Retrieved from https://www.atiner.gr/papers.htm

Caffrey, L. (2017). *Social Media and the Construction of "Self": How our new sociotechnical environment is changing the construction of identity.* University of Dublin. Ireland.

Cooley, C. H. (1902). Looking-glass self. In *The production of reality: Essays and readings on social interaction* (Vol. 6, pp. 126-128). Sage.

Cooley, C. H. (1998). *On self and social organization*. University of Chicago Press.

De Fina, A. (2018). *Discourse and identity.* Discourse Studies: A Multidisciplinary Introduction (Van Dijk). Chapter 13.

Ellis, D., & Tucker, I. (2020). *Emotion in the Digital Age: Technologies, Data and Psychosocial Life* (1st ed.). Routledge. https://doi.org/10.4324/9781315108322

Freud, S. (2015). Beyond the pleasure principle. *Psychoanalysis and History, 17*(2). https://doi.org/10.3366/pah.2015.0169

Freud, S. (2018). *The Ego and The Id.* Dover Publications.

Gagné, M., & Forest, J. (2008). The Study of Compensation Systems Through the Lens of Self- Determination Theory: Reconciling 35 Years of Debate. *Canadian Psychology/Psychologie canadienne, 49*(3), 225-232. Canadian Psychology, Canada. https://doi.org/10.1037/a0012757

Goffman, E. (1956). *Presentation of Self in Everyday Life.* Monograph 2. Social Sciences Research Centre, University of Edinburgh.

Hendrix, J. (2006). *The Imaginary and Symbolic of Jacques Lacan.* Architecture and Psychoanalysis. New York: Peter Lang.

Horney, K. (1991). *Neurosis and human growth: the struggle towards self-realisation.* W.W. Norton & Company, London, UK.

Ibrahim, Y. (2018). *Production of the 'Self' in the digital Age.* Pelgrave Macmillan, UK. https://doi.org/10.1007/978-3-319-74436-0

Kramer, A., & Chung, C. (2011). Dimensions of Self-Expression in Facebook Status Updates. *Proceedings of the International AAAI Conference on Web and Social Media, 5*(1), 169-176. Retrieved from https://ojs.aaai.org/index.php/ICWSM/article/view/14140

Lacan, J. (1953). Some reflections on the ego. *International Journal of Psychoanalysis, 34*, 11-17.

Lacan, J. (1965). *L'objet de la psychanalyse.* Unpublished seminar. Paris.

Lacan, J. (1966a). *Remarques sur le rapport de Daniel Lagache.*

Lacan, J. (1966b). *D'une question préliminaire à tout traitement possible de la psychose.*

Lacan, J. (1985). *The Mirror Stage as Formative of the Function of the I as Revealed in Psychoanalytic Experience 1934*. In Écrits. The Hogarth Press and the Institute of Psychoanalysis, London, UK.

Lacan, J. (1988). The Ego and the Other, On Narcissism, The Two Narcissisms, Ego Ideal and Ideal Ego, The Symbolic Order. In Jacques Alain-Millar (Ed.), *The Seminar of Jacques Lacan Book I.* W.W. Norton & Company, New York, US.

Lacan, J. (1989). *Ecrits* (translated by Allan Sheridan). Routledge, London, UK.

Lacan, J. (2006). *Ecrits* (translated by Bruce Fink). W.W. Norton and Company, London, UK.

Mead, G. H. (1934). *Mind, Self, and Society*. University of Chicago Press, Chicago, US.

Muller, J. (2009). Lacan's mirror stage. *Psychoanalytic Inquiry, 5*(2), 233-252. https://doi.org/10.1080/07351698509533586

Papacharissi, Z. (2002). The presentation of Self in virtual life: characteristics of personal home pages. *Journalism & Mass Communication Quarterly, 79*(3), 643-660. https://doi.org/10.1177/107769900207900307

Parker, I., & Pavón-Cuéllar, D. (Eds.). (2013). *Lacan, Discourse, Event: New Psychoanalytic Approaches to Textual Indeterminacy* (1st ed.). Routledge. https://doi.org/10.4324/9781315884295

Richard, M. R., & Edward L. D. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist, 55*(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68

Rogers, C. R. (1957). The Necessary and Sufficient Conditions of Therapeutic Personality Change. *Journal of Consulting Psychology, 21*(2), 95-103. https://doi.org/10.1037/h0045357

Schalk, S. (2011). Self, Other and Other-Self: Going Beyond the Self/Other Binary in Contemporary Consciousness. *Journal of comparative research in anthropology and sociology, 2*(1). Retrieved from https://compaso.ro

Stone, C., & Wang, Q. (2019). From conversations to digital communication: The mnemonic consequences of consuming and producing information via social media. *Topics in Cognitive Science, 11*(4), 774-793. https://doi.org/10.1111/tops.12369

Stone, G. (1981). Appearance and the self: A slightly revised version. In G. Stone & H. A. Farberman (Eds.), *Social psychology through symbolic interaction* (2nd ed., pp. 187-202). Wiley, New York, US.

Terpstra, G. (2016). *Self VS. Digital Self.* https://doi.org/10.31274/etd-180810-5654

Thibierge, S., & Morin, C. (2010). The Self and the Subject: A Psychoanalytic Lacanian Perspective. *Neuropsychoanalysis, 12*(1), 81-93. https://doi.org/10.1080/15294145.2010.10773632

Vanheule, S. (2011). Lacan's construction and deconstruction of the double-mirror device. *Frontiers in Psychology, 2.* https://doi.org/10.3389/fpsyg.2011.00209

Vogel, E., Rose, J., Roberts, L. & Eckles, K. (2014). Social Comparison, Social Media, and Self-Esteem. *Psychology of Popular Media Culture, 3*(4), 206-222. American Psychological Association. https://doi.org/10.1037/ppm0000047

Waldman, A. E. (2016). Privacy, Sharing, and Trust: The Facebook Study. *Case Western Reserve Law Review, 67*(1). USA. Retrieved from https://scholarlycommons.law.case.edu/caselrev/vol67/iss1/10

Zhao, S. (2005). The digital self: Through the looking glass of telecopresent others. *Symbolic Interaction, 28*(3), 387-405. https://doi.org/10.1525/si.2005.28.3.387

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behaviour, 24*(5), 1816-1836. https://doi.org/10.1016/j.chb.2008.02.012

The Mediating Role of the Meaning of Work in the Relationship between Organizational Constraints and Psychological Well-Being at Work

Samuel Nyock Ilouga[1] & Aude Carine Moussa Mouloungui[2]

[1] University of Yaoundé 1, Yaounde, Cameroon

[2] Omar Bongo University of Libreville, Libreville, Gabon

Correspondence: Samuel Nyock Ilouga, Unviersity of Yaounde 1, Yaounde, Cameroon.

Abstract

This study examines the mediating role of the meaning of work in the relationship between organizational constraints and well-being at work. A selection of two inductors of the work situation was done in the framework of this study because of their explanatory power related to well - being at worknamely: workload and hierarchical support. Our hypothesis postulates that the meaning of work combines with the characteristics of the work situation to determine well-being at work (BET). In other words, we believe that the meaning of work mediates the effects of organizational inductors on well-being at work. In this perspective, 581 teachers from primary and secondary schools all sectors included (public, private, denominational, etc.) of the city of Yaounde (Cameroon) and aged between 21 and 60 years ($M = 35.3$, $\sigma = 7.9$) were interviewed using a self-report questionnaire. Multiple regression analyses following the procedure of Baron and Kenny (1986) confirm the mediating role of the meaning of work in the relationship between workload, hierarchical support and well-being at work.

Keywords: psychological well-being at work, meaning of work, workload, hierarchical support

1. Introduction

1.1 Problem

Problems related to psychological health at work are increasing dramatically (Gilbert, 2009; Bouterfas, 2014). This is certainly because the repression of the reality of work is increasing (Clot, 2006) and with it, the collapse of the meaning that it carries with, are taking on worrying proportions. While work remains vital for health because workers ask it to lighten the rest of their lives, work hardly offers any more opportunities for omnipotence, for broadening the foundations of the personality, for being at the origin of things and for creating the original links between them.

In an entropic social context, now deprived of the possibilities of transformation, marked by a sluggish activity, deprived of resources and creative initiatives, traversed by a managerial crisis that seems to have abandoned to the workers the care of thinking about their work and the responsibility of organizing their cooperation, Cameroonian teachers find themselves idle, deprived of psychodynamic and symbolic or even transpersonal recognition (Nyock Ilouga, 2019). In Cameroon, the effective attendance rate of teachers in overcrowded and dilapidated classrooms varies between 20 and 40%. The coverage rate of the teaching programs hardly exceeds 25% (Rivkin, Hanushek, & Kain, 2005). While the social status of teachers has deteriorated in all countries, the situation in Cameroon seems hopeless. Since the beginning of the 1990s, marked in particular by a spectacular reduction in the salaries paid to Cameroonian civil servants, the conditions for exercising the teaching profession have gradually sunk to critical levels, forcing teachers to scramble for survival. Mingat and Suchaut (2000) have noted that the social recognition of the teacher and his or her membership of an elite no longer exist in Cameroon. The Cameroonian teacher is despised by his pupils and their parents, some of whom do not hesitate to be generous towards poor teachers in exchange for a particular follow-up of their child. The administrative hierarchy and society in general attribute to teachers the responsibility for the general decline in the level of competence and the development of incivility. If we add to this the hardship of the task itself: the density of lessons, the continuous attention and personal involvement required, the permanent and diverse demands to

which the teacher must respond without resources, it is easy to recognize that the life of the Cameroonian craftsman of knowledge is hardly defensible in his work environment, since his activity and his health are antinomic (Artaud, 1984). However, even under these conditions, teaching does not make sense because it is always and above all a question of bearing the weight of the responsibility of representing a community and, in so doing, showing the way towards the higher forms of the common world. What role does the meaning of work play in helping Cameroonian teachers to bear an important workload, without resources, and staying healthy?

1.2 Psychological Well-Being

Conceptions of psychological well-being have been based essentially on two approaches: a hedonic approach and eudemonic approach to well-being (Ryan & Deci, 2001). Hedonism is a Greek philosophical doctrine stipulating that the quest for pleasure and the avoidance of displeasure is the goal of human existence. In psychology, hedonic well-being is conceptualized and measured as subjective well-being (Diener et al., 1999); it represents the result of interactions between the stimuli linked to the existence of the individual and the different situations he encounters. Subjective well-being is made up of three components: positive effects, a low level of negative effects, and satisfaction (Diener et al., 1999).

According to the eudemonist current, well-being consists of a psychological functioning in accordance with one's own nature, linked to the fact of living in harmony with oneself and one's values (Ryff & Keyes, 1995). From this perspective, well-being goes through self-realization, from the moment when the individual seizes the opportunities to develop and considers life according to the challenges that arise, while feeling capable of facing them (Waterman, 1993). Thus, psychological well-being relates to the subject's positive relations with his entourage, autonomy, control of his environment, self-acceptance, personal development, the need for competence, the need for social affiliation and the need for autonomy (Ryan & Deci, 2000; Ryff, 2014). The primary goal is to live in accordance with oneself and one's values (Waterman, 1993).

1.3 Well-Being at Work

Presented as a dimension of the psychological contract that results from the perception of situations and constraints relating to the professional sphere (Grosjean & Guyot, 2016), well-being at work is to be distinguished from psychological well-being which is rooted in ontological and existential reflections.

On the other hand, the conceptual framework of well-being at work is based on an abundant Anglo-Saxon literature inspired by positive psychology which insists on the need to take into account the overall feeling of fulfilment and fullness (Steger et al., 2008; Park, 2010). In fact, well-being at work emerges through the relationship that the worker builds with his work situation. It acquires greater validity when the items that measure it are related to the professional field (Gilbert et al., 2011). However, the meaning of work situations has an impact on life in general and any dissonance between well-being at work and overall psychological well-being generates distress and mobilizes cognitive efforts aimed at reducing this gap. This point of view is defended by Danna and Griffin (1999) who integrate in their conceptual model of well-being at work, the dimensions of physical and mental health, work-related satisfactions such as payroll and job promotion opportunities, the various extra-professional satisfactions such as leisure, the level of social and family life. They establish interrelationships between job satisfaction and joblessness satisfaction.

Cotton and Hart's heuristic model of organizational health (2003) partially supports this view and describes well-being at work as the association of distress, fulfilment, and job satisfaction. In another register, the model of Daniels (2000) operationalizes well-being at work through a continuum comprising five refuges: anxiety-comfort, depression-pleasure, boredom-enthusiasm, fatigue-vigor, and anger-placidity. In the same vein, the multidimensional approach to well-being at work is also at the center of the concerns of Dagenais-Desmarais (2010) who proposes a two-axis model. The first axis reflects the sphere of reference which corresponds to the positive experience the individual has at work. This sphere of reference contains three levels: the positive state of a worker in relation to himself, the positive state of a worker in relation to the social interactions that he forges in his work, and finally the positive state resulting from the interaction between the worker and the organization that employs him (Dagenais-Desmarais, 2010). The second axis materializes the mechanism through which the worker develops his positive experience. These approaches target the relationships that workers build with their work situations, taking into account the significant experiences of their socio-professional experiences. In fact, well-being at work is affected not by work constraints, which would by definition have an impact of the same importance for everyone, but by the necessarily subjective meaning that certain work situations have for the employee.

1.4 What does Psychological Well-Being at Work Depend on

Scientific literature on well-being at work emphasizes on the determining role of the interaction between the subjective experience of workers and work constraints in the construction of well-being at work (Grosjean & Guyot, 2016). In this perspective, a large number of organizational, psychosocial and personal factors that may have a more or less significant impact on the physical and psychological health of workers can be identified. In the present research, we will examine the impact of perceived workload, hierarchical support, and meaning of work.

1.4.1 The Workload

Currently, work overload is a factor of work requirements or a psychosocial risk at work which can generate stress and, in the long run, deteriorate well-being at work (Truchot, 2004). According to Ntsame-Sima (2012), workload is conceived in two dimensions which are the quantitative load and the qualitative load. Quantitative load refers to a high amount of work and lack of time to complete it. As for the qualitative load, it refers to the worker who has the feeling of not having the necessary skills for the tasks entrusted to him. In recent years, teachers have been emphasizing on the increase of their task (Riel, 2008). The growing heterogeneity of students, the increase in school attendance and the implementation of pedagogic reforms have likely contributed to this perception. In addition, teaching profession is becoming more and more demanding in terms of time to be invested in accomplishing many and varied tasks previously reserved for support staff such as psychologists, guidance counsellors and specialized educators, which number has reduced significantly due to budget restrictions (St-Arnaud et al., 2000). This increase in work is not without consequence, as it leads to an increase in psychological demands. These demands refer to the psychological load associated with unforeseen tasks, the psychological conflicts resulting from contradictory injunctions and prescriptions in all directions disconnected from the reality of the actual performance of the work. These random demands, in high quantity, can place the individual in a state of stress when they exceed or threaten to destroy the resources available to do the job well. Well-being at work is particularly threatened in an environment where individuals try to fill the gaps in the work environment by introducing their own resources.

Research results show a link between the psychological demands of work and the psychological distress of teachers (Chartrand, 2006). It should be added that the large number of hours worked (Finlay-Jones, 1986; Griva & Joekes, 2003) and the irregularity of working hours (Chartrand, 2006) are important determinants of the well-being of teachers at work. Hypothesis (H_1): Overall, we expect a low level of well-being at work among Cameroonian teachers, given the dysfunctions of the context. However, we believe that the level of well-being at work would depend on the workload received by each worker.

1.4.2 Hierarchical Support

Hierarchical or organizational support reflects the feeling of being supported by the organization through the hierarchical superior.
Supervisor support is one form of Hierarchical support alongside that which can be provided by colleagues, family, friends or others outside the company (Roger & Othmane, 2013).

As part of the types of support, with reference to work-related resources, colleagues and supervisors make suggestions that can help reduce demands at work, or in many cases, can even directly reduce demands at work (Ntsame-Sima, 2012). Hierarchical support has two dimensions that can be complementary: on the one hand an emotional dimension, characterized by listening and sympathy, the interest shown in the person and the signs of recognition that can be shown to him, and on the other hand, an instrumental dimension in the form of tangible assistance, help or advice to accomplish a professional mission. In his definition of types of support through a study related to teachers, Hobfoll (1988) likens emotional support to the manifestation of confidence, empathy, love or benevolence which would make it possible to consolidate the teacher and strengthen his emotional regulation capacities. As for the instrumental support, it corresponds to technical assistance, a reflection on the difficulties arising in the professional context, relevant information, advice in the form of feedback on the work provided or the situation described.

In this perspective, the support of the hierarchical supervisor therefore takes several forms: the hierarchical manager can, for example, transmit information to his collaborator, remove obstacles that hinder the normal performance of work, congratulate him, give him regular feedback on his performance and advice to improve it, entrust him with missions that promote his development or help him in his career orientation (Greenhaus et al., 1990). Karasek & Theorell (1990) suggest that, in difficult work situations, hierarchical support can have a "cushioning" effect on stress and an accelerator of well-being at work (Rodriguez et al., 2001). Hypothesis (H_2): we think that the level of well-being at work would depend on the hierarchical support received by the worker.

1.4.3 The Meaning of Work

According to Sartre (1996), work cannot be part of activities that might bring meaning to one's life. To him, those activities are fair, good, self-satisfying, and do not need any other source of motivation. Yet, Comte-Sponville (2017), asserts that work is not a moral value. It can therefore not be self-satisfactory, since it is primarily a means to serve extra professional roles. That is the reason why, according to him, work has a meaning. But, meaning being a basically extrinsic notion, the meaning of work goes deep inside roles achieved by an individual in other fields of life (Nyock Ilouga & Moussa Mouloungui, 2019). The paradox is a testimony of how complex the concept of meaning is, and justifies the abundance and diversity of approaches dedicated to it (Bernaud, 2016). Among outstanding contributions to understand the meaning of work, it is worth noting with Kant (1993, first edition in 1975) and Sartre (1996) the idea that meaning is a result of a continuous construction or a search for meaning in a world that is deprived of it. In an entropy context characterized by a seamless job market, long-term unemployment, and informal activity development (Nyock Ilouga et al., 2018), the above mentioned conquest is brought to a new light. Jung's idea which states that a human being completes the work of creation and "determines its level of perfection" revives the promethean approach of work and makes it a creative activity (Meda & Vandramin, 2013). Work therefore carries essential meaning when it can vehicle such values as empathy, selflessness and generativity. Thus, construction of meaning could be a result of consistency between the worker's values and behavior. Many adhere to the idea that the meaning of work can be reviewed from the perspective of consistency (Yalom, 1980; Morin, 2001, 2008). More than ever, this position needs a clever link between various spheres of life, and needs conciliations and regulations between some values (Lourel & St-Onge, 2012). Just as life, work is not a new concern (Bernaud, 2016), and this concept did not appear spontaneously with all its characteristics from its prehistoric origins (Méda & Vandramin, 2013). The various meanings it has nowadays have added up to one another over time. However, the key point is that work is an energy expenditure aimed at producing anything useful through a set of activities (Firth, 1948; Fryer & Payne, 1984; Shepherdson, 1984). Basically, work is all about facing difficulties that influence the development of resilient ingenuity (Dejours, 1993). It carts both a pleasant and unpleasant tone, and takes it meaning namely from its socioeconomic usefulness. People work for self-love and for the love of their families. Even the aim of the pleasure obtained from a "good" job is firstly to expand the narcissist nature of its author, and therefore strengthen their self-esteem. It is notably because of self-love that one assesses the perfection of a work's results, which is why we search for consistency between the self and what we do. By looking further into good job, one can enjoy one's own qualities and appreciate their inherent talent. The process is the same when we admire other people's work. By doing that, we compare with them and acknowledge them as alter ego, having equal qualities, defeating the same difficulties and clearing the same obstacles. In that respect, three theoretical approaches were used to set the roles of meaning in workers' life: a) Research of Frankl (1969), then of Hackman & Oldham (1976), which focused on the contribution of work to the construction of the meaning of life, have revealed that finding the meaning of work drives an individual to fulfil their destiny; b) at the same time, Rosso et al. (2010), Steger et al. (2012) and Proulx et al. (2013) have shown that meaning focuses workers' attention and drives their behaviours and actions to the fulfilment of their working goals; c) finally, Rosso et al. (2010) and Steger et al. (2012) then Gomez-Gonzalez et al.'s (2013) approach based on the understanding of work determined that understanding work can assign a meaning to it and provide an integration of one's identity through the construction of a social identity and the backup of personal dignity. However, meaning is an individual experience, as well as the feeling of the absence of meaning, which can be described as a state of emptiness in one's existence, characterised by boredom, apathy and vacuity which become more prevalent in all fields of life (Ruffin, 1984; Frankl, 1969; Yalom, 1980). It is often determined by the lack of purpose (Frankl, 1969), the feeling of dependency and inauthenticity, and the feeling of powerlessness (May et al., 2004). The central assumption of these approaches is that workers who experience meaning in their work find resources for their personal development, motivation and well-being at work (Spreitzer et al., 1997). However, a meaningless work might lead to alienation and disengagement. Hypothesis (H_3): we support that experience of meaning through social usefulness can play an intermediate role between work constraints (perceived workload, hierarchical support) and workplace wellness.

1.5 Research Conceptual Framework

Baron and Kenny (1986) have explained the roles of the variables involved in a triangular relation where one variable (the mediating variable) plays an intermediary role between two other variables (independent variable and dependent variable) that are both involved in an explanatory model. Their mediation model's shape can be seen in the following diagram:
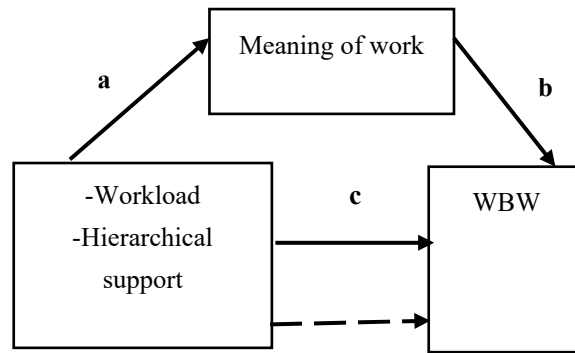
Figure 1. diagram of research conceptual framework. Note. well-being at Work (WBW)

The model above has three variables. We assume that the interaction between two of them, rather than its underlying components, results in the third variable. This design consists in three linear regression equations, which allow us to materialize the direct influence of the independent variable (X) on the mediator (M) and the dependant variable (Y), but also the residual effect of both the independent variable (X) and the mediating variable (M) on the dependant variable (Y) when (M) and (X) are simultaneously incorporated in the same least squares linear regression calculation.

$$Y = \beta_{1.0} + cX + e_1 \ (E_1)$$
$$M = \beta_{2.0} + aX + e_2 \ (E_2)$$
$$Y = \beta_{3.0} + c'X + bM + e_3 \ (E_3)$$

If E_1; E_2; E_3 represent the three least squares linear equations, $\beta_{1.0}$; $\beta_{2.0}$; $\beta_{3.0}$ refer to the intercept of each of the three; with c as X total effect on; a as X total effect on M; c' as X residual effect on Y and b as M residual effect on Y.

Yzerbyt et al. (2018) revealed that: when the three conditions are met, the mediation is effective if, and only if the independent variable's X (total effect (c) on the dependent variable Y (E_1) is greater in absolute value than the independent variable X residual effect (c') on the dependant variable Y (E_3). In other words, in case the three equations were correctly evaluated, the mediation model comprises an underlying equality which can be formulated trough the following fundamental equation: $c = c' + a \times b$. What appears through it is that the difference between X on Y direct effect (c) and residual effect (c') is equal to the product between X on M direct effect (a) and the residual effect of M on Y.

In this approach, Baron and Kenny (1986) were more interested in the interaction effect between the independent variable and the mediating variable, rather than the direct effects of underlying components. When the effects of the independent variable and the mediator on the dependent variable are estimated jointly (E_3), there is a high risk of multicollinearity inflation. Therefore, the independent variable might have a lower coefficient when it is the only one that predicts the dependant variable (c), and a higher coefficient when it acts simultaneously with the mediator (c') in one equation. But the high coefficient will not be significant, while the low one will be.

If the value of c' is reduced to zero, there is a strong evidence that it is a single dominant variable. But, if the same residual effect of X on Y is non-zero, then, many mediating factors are acting here. In order to make sure that the mediating effect is meaningful, it is recommended to use the divisive approach suggested by Yzerbyt et al. (2018). This approach shows that the two coefficients that constitute the product between X on M direct effect (a) and the residual effect of M on Y (b) are simultaneously meaningful.

2. Method

2.1 Participants and Procedure

Table 1. Sample Description

	Category	Headcount	Frequency
Gender	Women	313	62.43%
	Men	268	37.57%
Age	[21 – 30]	155	30.39%
	[31 – 40]	179	43.65%
	[41 – 50]	138	20.99%
	[51 – 60]	19	4.97%
Type of school	Primary	285	46.96%
	Secondary	296	53.04 %
Length of service	Lessthan 5 years	137	20.44%
	[5 – 10]	183	45.85%
	[11 – 20]	140	22.10%
	[21 – 30]	112	6.63%

Although the crisis of meaning tends to spread to all sectors of activity (Yalom, 1980), the teachers seem to be more exposed to the loss of meaning because of the general decline in the skill level and the development of incivility. We therefore logically chose to target this population to conduct this study. Several school heads in the center region (Cameroon) provided us with computerized lists of teachers. We invited all 1000 teachers to participate in the survey. To achieve this, we were present during sectoral meetings organized by the school heads. We insisted on the fact that the supervision authorities accepted the implementation of the research with the teachers, after validating the ethical guarantee provided by the ethics committee of the Yaoundé 1 University. But they are not implicated in the research however. It was also an opportunity to answer questions and dispel fears. Each time, the research questionnaires were distributed to the volunteers in closed envelopes with a stamped envelope addressed to the researchers. Several reminders were sometimes necessary to obtain the collaboration of some respondents. The completed questionnaires were hand-delivered to the researchers.

Our sample is made up of five hundred and eighty-one (581) volunteer's teachers from Yaounde (Cameroon)people who have agreed to submit their completed questionnaire. In order to make a better description of the sample's nature, sociodemographic data of the 581 participants are presented in Table 1. It appears that the sample is mainly made up of women, i.e. 313 women (62.43%) and 268 men (37.57%). The average age of people interviewed is 35 years, with an important dispersion (standard deviation = 7,9). This is a characteristic of a population dominated by youths below 40 years, with the youngest individual aged 21, and the oldest 60. This age repartition illustrates the country's population, and perhaps the whole African continent, which is made up of an important group of young people with a low life expectancy. They represent major challenges in terms of employability, health, nutrition, etc. (Nyock Ilouga, 2018). Not all interviewed teachers intervene at the same level of education. 285 participants (46.96%) teach in primary school and 296 participants (53.04%) teach in secondary school. Among the 581 teachers who accepted to take part in this study, 287 (48.07%) work in the public sector, while 294 (51.93%) work in the private sector. As for the length of employment, it ranges between two (2) years and thirty (30) years (*M*= 8.93, σ = 6.43). The study took place during the month of May 2019. Participants were asked to fill a questionnaire with a pencil. To that end, we met all interviewed teachers in their different schools.

2.2 Material

The workload. Measurement scale for the amount of work was built based on the works of Ntsame-Sima (2012). It is made up of 26 items (e.g. *I am in charge of too many students, which is emotionally heavy for me*) recorded on a Likert scale in 3 points ("1. Strongly disagree"; "2. Moderately agree"; "3. Strongly agree''). The internal consistency of the scale is therefore α = .84.

Hierarchical support. A ten items edited version of the FOCUS research group's tool (Nyock Ilouga, 2007) was used to assess the level of hierarchical (e.g. *Employees receive assistance from the management in order to*

progress). Items were recorded on a Likert scale in 3 points ("1. Strongly disagree"; "2. Moderately agree"; "3. Strongly agree"), with an internal consistency of α = .90.

The meaning of work. Measurement of the meaning of work originates from a questionnaire which assesses the psychological enablement through four sub-dimensions: the meaning of work, perceived autonomy, perceived influence, and a sense of competence. Actually, the measurement of the meaning of work is a subscale of the francophone version of the psychological enablement questionnaire designed by Gobert (2000) and approved by Boudrias et al. (2010). It has been used to collect participants' opinion about their work. Items for the measurement of the meaning of work were recorded on a Likert scale in 3 points ("1. Strongly disagree"; "2. Moderately agree"; "3. Strongly agree"), with a very satisfactory internal consistency (α = .89).

Workplace wellness. Gilbert et al.'s (2011) measurement scale for workplace wellness (WpW) was used in the frame of this study. In fact, it is a version of Massé et al.'s scale for measuring manifestations of psychological well-being (1998), adapted to the world of work and empirically approved by Gilbert et al. (2011). It is made up of 25 items recorded in 3 points ("1. Strongly disagree"; "2. Moderately agree"; "3. Strongly agree") on a scale of Likert that was used in the frame of the present study (e.g. *I feel confident*). The internal consistency of this scale was highly satisfactory (α = .90).

2.3 Data Analysis

Internal consistency checks were conducted (Cronbach's alpha) to assess the internal consistency of items used in measurement scales. Descriptive analysis (averages and standard deviations) have also been applied to summarize the information collected about each variable. In order to check our various hypothesis, we favored the linear least squares technique to solve linear regression equations (Baron & Kenny, 1986).

3. Result

3.1 Correlations Analysis

Correlations analyses were carried out to examine the links between the variables under study.

Table 2. Correlation Matrix, Means, Standard Deviations (Cronbach's alpha)

Variables	1	2	3	4	Average	Standard Deviation
1. Workload	(.84)				1.9	.34
2. Support	-.29**	(.90)			2.23	.59
3. Direction	-.27**	.56***	(.89)		2.67	.53
4. WBW	-.25**	.54***	.66***	(.90)	2.47	.34

Note. *** p <.001; ** p <.01. Cronbach's alphas (α) are given on the dialogual in brackets. Support= hierarchical support; WBW= psychological well-being at work.

The BET has positive and very high links with hierarchical support (r = .54, p < .001) and work direction (r = .66, p < .001). This means that the support provided to workers contributes not only to their well-being, but also to the discovery of the meaning of work. Workload is negatively related to BET (r = -.25, p < .01) and sense of work (r = -.27, p < .01). This suggests that when workload appears high to the worker, it inhibits well-being and masks the sense of work.

3.2 Regression Analysis

Simple and multiple regression analyses were carried out to test whether the direction of work sense acted as a mediator variable between workload, hierarchical support and psychological well-being at work. Baron and Kenny' (1986) guidelines were followed to check whether the basic postulates of a mediating effect ere respected.

First, these authors mention that, in order to conclude mediation, the independent variable must be linked to the mediating variable. This first condition has been fulfilled, since the regression equation (E_2) shows that:

- The workload contributes significantly to the explanation of the variance of the meaning of work scores; adjusted R^2 = .11; $F_{(1, 579)}$ = 25.28, *p*< .001; a_1(Note 1) = -.54, t = -5.02, *p*< .001.

- Hierachical support contributes significantly to the explanation of the variance of the meaning of work scores; adjusted R^2 = .31; $F_{(1, 579)}$ = 84.12, *p*< .001; a_2 = .51, *t* = 9.17, *p*< .001.

Second, it is important the independent variables are significantly related to the dependent variable. This third condition has been met as the regression equation (E_1) reveals that:

-   The workload contributes significantly to the explanation of the well-being score variance at work, adjusted R^2 = .10; $F_{(1, 579)}$ = 22.80, $p< .001$; c_1(Note 2) = -.33, t = - 4.77, $p< .001$. This result validates our first hypothesis (H_1). Nevertheless, the average score of well being at work is not as low as we considered in this hypothesis.

-   Hierarchical support contributes significantly to the explanation of the well-being score variance. Adjusted R^2 = .28; $F_{(1, 579)}$ = 72.47, $p< .001$; c_2 = .30, t = 8.51, $p< .001$. This result supports our second hypothesis (H_2).

-   Third, the mediator variable must be related to the dependent variable. This third condition has been met as the regression equation reveals that:

-   The workload contributes significantly to the explanation of the well-being score variance at work, adjusted R^2 = .43; $F_{(1, 579)}$ = 138.94, $p< .001$; β = .42, t = 11.78, $p< .001$.
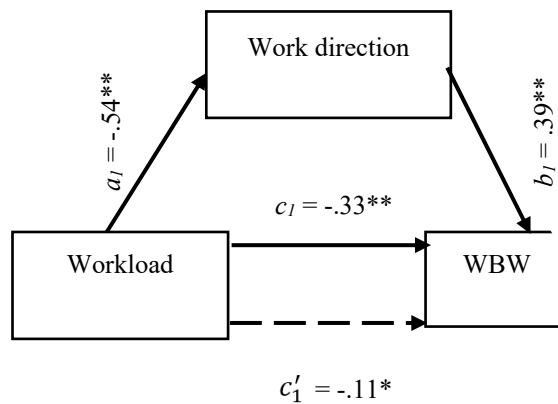

Figure 2. A Mediation's example of work direction in the relationship between workload and well-being at Work (WBW). Note. **=p < 0,001

Finally, according to Baron and Kenny (1986), perfect mediation is observed if the independent variable no longer has an effect on the variable when the mediating variable is controlled, then a partial mediating effect can be concluded. Conversely, if the relationship between the independent variable and the dependent variable decreases but remains significant when the mediating variable is controlled, then a partial mediating effect can be concluded. This last condition has been met. Simultaneously including the independent variable (workload) and the mediator (work direction) in the same regression equation, the regression coefficients which estimate the workload (c'_1= -.11; $p< .05$) and hierarchical support (c'_2= .13; $p< .001$) residual effects remain significant as predictors of the psychological well-being at work.
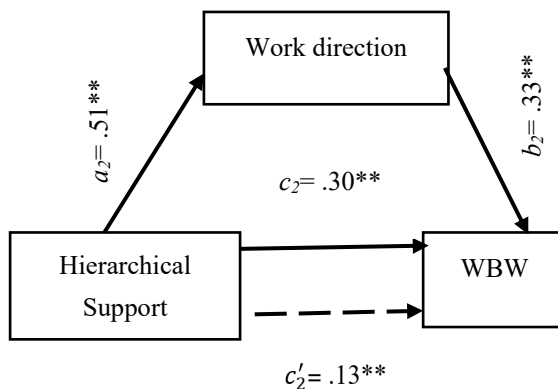

Figure 3. A Mediation's example work direction in the relationship between hierarchical support and well-being at Work. Note. **=p < 0,001

3.3 Verification of the Fundamental Equation of Mediation

In our study, we examined the operational validity of the underlying equality of the mediation model suggested by Yzerbyt et al. (2018). It appears that:

a) When considering workload as an independent variable, meaning of work as a mediating variable and well-being at work as a dependent variable, we obtain the following result:

b) $[c_1 = c_1' + a_1 \times b_1] \rightarrow [(-.11) + ((-.54) \times .39) = -.3206 \cong -.33]$.

c) When hierarchical support is considered as an independent variable, meaning of work as a mediating variable and well-being at work as a dependent variable, the following result is obtained:

d) $[c_2 = c_2' + a_2 \times b_2] \rightarrow [.13 + (.51 \times .33) = .2983 \cong .30]$.

Based on the results of this estimation of the basic mediation equation, we can conclude that work meaning is an excellent mediator of the effects of organizational constraints (perceived workload and perceived hierarchical support) on well-being at work. This result brings total support to our third hypothesis (H_3).

4. Discussion

We initiated this research to test one of the dominant hypotheses in the current positive psychology literature that the meaning of work mediated the impact of work constraints on psychological well-being in the workplace (Steger et al., 2012). From the series of three regression equations performed using the linear least squares method, it was observed that the recommendations of Baron and Kenny (1986) are fulfilled. All regression coefficients were found to be significant for all three equations (E_1, E_2, E_3). These results thus support the hypothesis introduced by Yzerbyt et al. (2018) of the joint significance of the residual effects c' and b of equation (E_3). In fact, in accordance with the postulate of the factor model, the indirect effect is attested if and only if the two regression coefficients which form the product of the indirect effects are simultaneously significant. However, the mediation effect is then effective when the values of the regression coefficients which attest to the presence of the residual effects remain lower in absolute value than those associated with the direct effects in equations E_1, and E_2. In other words, the effects of the independent variables on the dependent variable (psychological well-being at work) are smaller when we have introduced the mediating variable (direction of work) into the equation.

The results in Figure 2 show that the workload perceived by the teachers surveyed has the effect of degrading their BET; this is justified by the negative value of the regression coefficient ($c_1 = -.33$; p<.001). On the other hand, the fact that a worker finds meaning in his or her work has the effect of increasing well-being ($\beta = .42$; p<.001). In contrast, Figure 3 shows that hierarchical support improves the psychological well-being of employees ($c_2 = .30$; p<.001). Also, the fact that a worker knows that he or she is supported by his or her hierarchy will contribute to the construction of the meaning of work.

In general, this study tends to confirm the central role of work meaning in the study of psychological well-being at work (Morin, 2008). The fact that workers perceive that their work makes sense would be significantly related to the fact that they feel good and experience fewer symptoms of psychological distress. Thus, lightening the workload and constant evidence of positive feedback and recognition from the line manager could promote the construction of a sense of meaning in work and, subsequently, better well-being at work. Indeed, managers would benefit from setting up management methods that encourage employees to build work meaning (Bernaud et al., 2015) by reducing the workload and giving them recognition by valuing the work they do.

4.1 Limitations of the Study

However, this study has certain limitations. A first limitation of this study concerns the selection process of participants. The sample for this research is quite small in terms of scope since it comes from a single educational background. This limitation means that the conclusions drawn from this study must be generalized with caution to populations from other settings or work contexts. The use of measuring instruments with certain characteristics could also be seen as a limitation. Indeed, all of the measurement scales used in this study were assessed on a three-point Lickert scale, which contrasts with the original versions of these scales, which were almost all assessed on a five-point scale. The use of these instruments would therefore limit the scope of the results. Second, the data for this research was collected through a single source of information, self-reported questionnaires. As a result, these questionnaires measured employees' perceptions of the various variables. Also, the social desirability effect (Leplège, 2001) and the participant response biases associated with this evaluation method may have affected the results. Finally, the research design itself used for this study is restrictive. In fact, taking a single measurement time does not make it possible to predict all of the effects of the variables studied over a longer period of time. Indeed, as the researchers of MOW (1987) put forward, it seems that the direction of work is a concept that evolves over time for the same individual. A longitudinal research design would have made it possible to better understand the variation in workers' perception of the meaning of work over time. This

type of estimate would also make it possible to observe a possible evolution over time of the other variables studied, i.e. perceived workload, hierarchical support and psychological well-being at work.

In light of the limitations outlined above, suggestions for future research will now be presented.

4.2 Avenues for Future Research

In terms of future avenues of research, it would be interesting to replicate this research by studying these questions with diverse samples. It might be particularly relevant to include different job categories in order to draw various profiles of individuals. In addition, using a sample of participants from various backgrounds would make it possible to verify whether the results are comparable from one setting to another. With respect to instrumentation, the instrument used to measure the direction of work consisted of only three items. One would suspect that its small number of items did not allow for sufficient variability in the participants' responses to this variable. Thus, it would be relevant to use the instrument developed by Arnoux-Nicolas, Sovet, L'hotellier and Bernaud (2017) to measure the meaning of work. Since this instrument in addition to having a large number of items (17 items) has been empirically validated in the Cameroonian context by Nyock Ilouga et al. (2018).

5. Conclusion

The issue of the psychological well-being of employees at work is becoming increasingly important at the global socio-economic level. Since the meaning of work could play an important role for psychological well-being at work, it is important that the mediating effect of this variable be analyzed in relation to several factors that have an impact on the BET. In this study, only partial mediating effects were found between organizational drivers (respectively workload and hierarchical support) and psychological well-being at work. It will therefore be necessary to analyze the presence of multiple mediators (Grigoratus & Brunet, 2008) which will better explain the relationship between these two organizational drivers and psychological well-being at work. However, some limitations have been raised and avenues for further investigation have been proposed.

References

Arnoux-Nicolas, C., Sovet, L., Lhotellier, L., & Bernaud, J.-L. (2017). Development and validation of the meaning of work inventory among French workers. *International Journal of Education and Vocational Guidance, 17*, 165-185. https://doi.org/10.1007/s10775-016-9323-0

Artaud, A. (1984). *Oeuvres Complètes* (Vol. Tome I). Paris: Gallimard.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bernaud, J.-L. (2016). Le "sens de la vie" comme paradigme de conseil en orientation. *Psychologie Française, 61*(1), 61-72. https://doi.org/10.1016/j.psfr.2013.06.004

Bernaud, J.-L., Lhotellier, L., Sovet, L., Arnoux-Nicolas, C., & Pelayo, F. (2015). *Psychologie de l'accompagnement: Concepts et outils pour développer le "sens" de la vie et du travail*. Dunod.

Boudrias, J.-S., Rousseau, V., Migneault, P., Morin, A. J. S., & Courcy, F. (2010). Habilitation psychologique: Validation d'unemesure en langue française. *Swiss Journal of Psychology, 69*(3), 147-159. https://doi.org/10.1024/1421-0185/a000017

Bouterfas, N. (2014). *Vers un modèle de la santé psychologique au travail des agents du social et de l'insertion: quels inducteurs organisationnels, psychosociaux et personnels sur le bien-être, la détresse et l'épuisement?* (Thèse de doctorat, Université de Lille 3). Retrieved from https://tel.archives-ouvertes.fr/tel-01199389

Brief, A. P., & Nord, W. R. (1990). *Meaning of Occupational Work*. Lexington Books.

Chartrand, R. (2006). *Les facteurs professionnels et la détresse psychologique chez les enseignants.* [Mémoire de Maîtrise, Université de Montréal]. Retrieved from https://papyrus.bib.umontreal.ca/xmlui/handle/1866/1563

Clot, Y. (2006). Clinique du travail et Clinique d'activité. *Nouvelle revue de psychosociologie, 1*(1), 165-177. https://doi.org/10.3917/nrp.001.0165

Compte-Sponvile, A. (2014). *Petit traité des grandes vertus*. Paris: Point.

Cotton, P., & Hart, P. M. (2003). Occupational wellbeing and performance: A review of organisational health research. *Australian Psychologist, 38*(2), 118-127. https://doi.org/10.1080/00050060310001707117

Dagenais-Desmarais, V. (2010). *Du bien-être psychologique au travail: Fondements théoriques, conceptualisation et instrumentation du construit* (Doctorate dissertation). Retrieved from https://papyrus.bib.umontreal.ca/xmlui/handle/1866/3916

Daniels, K. (2000). Measures of five aspects of affective well-being at work. *Human Relations, 53*(2), 275-294. https://doi.org/10.1177/a010564

Danna, K., & Griffin, R. W. (1999). Health and well-being in the workplace: a review and synthesis of the literature. *Journal of Management, 25*(3), 357-384. https://doi.org/10.1177/014920639902500305

Dejours, C. (1993). *Travail: Usure mentale*. De la psychopathologie à la psychodynamique du travail. Bayard.

Diener, E., Suh, E., Lucas, R., & Smith, H. (1999). Subjective well-being: three decades of progress. *Psychological Bulletin, 125*(2), 276-302. https://doi.org/10.1037/0033-2909.125.2.276

Finlay-Jones, R. (1986). Factors in the Teaching Environment Associated with Severe Psychological Distress among School Teachers. *Australian & New Zealand Journal of Psychiatry, 20*(3), 304-313. https://doi.org/10.3109/00048678609158878

Firth, R. (1948). Anthropological background to work. *Occupational Psychology, 22*, 94-102.

Frankl, V. E. (1969). *The will to meaning*. New American Library.

Fryer, D., & Payne, R. (1984). Working definitions. *Quality of Working Life, 1*(5), 13-15.

Gilbert, M.-H. (2009). *La santé psychologique au travail: conceptualisation, instrumentation et facteurs organisationnels de développement*. (Thèse de doctorat, Université de Montréal). Retrieved from https://papyrus.bib.umontreal.ca/xmlui/handle/1866/6369

Gilbert, M.-H., Dagenais-Desmarais, V., & Savoie, A. (2011). Validation d'unemesure de santé psychologique au travail. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology, 61*(4), 195-203. https://doi.org/10.1016/j.erap.2011.09.001

Gobert, P. (2000). L'habilitation psychologique comme variable intermédiaire (médiatriceou modératrice) entre les caractéristiques du travail, le leadership du superviseuret la satisfaction au travail, la performance individuelle, le stress. Article non publiéprésenté *au 11ᵉ congrès de l'Association Internationale de Psychologie du Travail de Langue Française* (AIPTLF), Rouen.

Gomez-Gonzalez, S. A., Leger, D., Bourdages, L., & Dionne, H. (2013). *Sensetprojet de vie: Une démarche universitaire au mitan de la vie.* Presse de l'Université du Québec. https://doi.org/10.2307/j.ctv18pgkq7

Greenhaus, J. H., Parasurman, S., & Wormley, W. M. (1990). Effects of race on organizational experience, job performance evaluations, and career outcomes. *Academy of Management Journal, 33*(1), 64-86. https://doi.org/10.2307/256352

Grigoratus, A. S., & Brunet, L. (2008). L'effet du rôle occupationnel et du climat organisationnel sur la santé psychologique au travail. Acte du *15ᵉ congrès de l'Association internationale de psychologie du travail de langue française* (AIPTLF), Laval.

Griva, K., & Joekes, K. (2003). UK Teachers under stress: Can we predict wellness on the basis of characteristics of the teaching job? *Psychology and Health, 18*(4), 457-471. https://doi.org/10.1080/0887044031000147193

Grosjean, V., & Guyot, S. (2016). Bien-être et qualité de vie au travail, Risques psychosociaux, de quoi parle-t-on? *Hygiène et Sécurité du Travail (HST), 242*, 6-9.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the Design of Work: Test of a Theory. *Organizational Behavior and Human Performance, 16*(2), 250-279. https://doi.org/10.1016/0030-5073(76)90016-7

Hobfoll, S. E. (1988). *The ecology of stress*. Hemisphere.

Isaksen, J. (2000). Constructing meaning despite the drudgery of repetitive work. *Journal of Humanistic Psychology, 40*(3), 84-107. https://doi.org/10.1177/0022167800403008

Kant, E. (1993). *Fondementsde la métaphysique des mœurs*. Grasset, le livre de poche.

Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. Basic Books.

Leplège, A. (2001). Introduction, enjeux, définitions. In Coste, J. & Leplège, A. (Eds.), *Mesure de la santé perceptuelle et de la qualité de vie: méthodes et applications* (pp. 15-36). ÉditionsEstem.

Lourel, M., & St-Onge, S. (2012). Du conflit à l'enrichissement travail-famille:Résultats et perspectives de recherche. *Psychologie du Travail et des Organisations, 18*(2), 100-101. https://doi.org/10.1016/S1420-2530(16)30087-5

Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélair, S., & Battaglini, A. (1998). Élaboration et validation d'un outil de mesure du bien-être psychologique: L'EMMBEP. *Canadian Journal of Public Health, 89*, 352-357. https://doi.org/10.1007/BF03404490

May, D. R., Gilson, R. L., & Harter, L. M. (2004). The Psychological Conditions of Meaningfulness, Safety and Availability and the Engagement of the Human Spirit at Work. *Journal of Occupational and Organizational Psychology, 77*(1), 11-37. https://doi.org/10.1348/096317904322915892

Méda, D., & Vendramin, P. (2013). *Réinventer le travail.* Presses Universitaires de France. https://doi.org/10.3917/puf.meda.2013.01

Mingat, A., & Suchaut, B. (2000). *Les systhemes éducatifs africains: une analyse économique comparative.* Bruxelles: De Boeck Université.

Morin, E. M., & Forest, J. (2007). Promouvoir la santé mentale au travail: Donner un sens au travail. *Gestion, 32*(2), 31-36. https://doi.org/10.3917/riges.322.0031

Morin, E. M. (1996). L'efficacité organisationnelle et le sens du travail. In T. C. Pauchant et al. (Eds.), *La quête du sens: Gérer nos organisations pour la santé des personnes, de nos sociétés et de la nature* (pp. 257-286). Éditions de l'organisation.

Morin, E. M. (2003). Stimuler la santé par le travail? Le cas des cadres supérieurs du réseau de la santé et des services sociaux au Québec. *Communication présentée au 58e congrès du département des relations industrielles de l'Université Laval sur le thème de Santé mentale et travail: L'urgence de penser autrement l'organisation*, Québec.

Morin, E. M. (2008). Sens du travail, santé mentale et engagement organisationnel. In IRSST (Ed.), *Études et recherches*. Montréal.

Morin, E. M., Joulain, M., & Maujonnet, C. (2003). Le sens du travail pour les femmes cadres supérieurs françaises et canadiennes. Communication présentée *au 11th European Congress on Work and Organizational Psychology*, Lisbonne, Portugal.

MOW International Research Team. (1987). *The Meaning Of Working*. Academic Press.

Ntsame-Sima, M. N. (2012). *Pour un modèle explicatif de l'épuisement professionnel et du bien-être psychologique au travail: vers une validation prévisionnelle et transculturelle* (Master's thesis, University of Lille3, Lille, France). Retrieved from https://tel.archives-ouvertes.fr/tel-01124105

Nyock Ilouga, S. (2007). *La congruence objective entre le profil structurel, organisationnel et l'individu: effets sur la satisfaction au travail et l'engagement normatif envers l'organisation. Utilisation du modèle de régression polynomiale* (Master's thesis, University of Lille 3, Lille, France). Retrieved from https://www.diffusiontheses.fr/53326-these-de-nyock-ilouga-samuel.html

Nyock Ilouga, S. (2019). *Le rapport au travail dans un contexte entropique.* Berlin: EUE.

Nyock Ilouga, S., & Moussa-Mouloungui, A. C. (2019). Le sens du travail dans un contexte entropique. *International Journal of Innovation and Applied Research, 26*(1), 218-229.

NyockIlouga, S., Mouloungui, A. C. M., Arnoux-Nicolas, C., & Bernaud, J.-L. (2018). Do the Meaning of Work and the Coherence between a Person and His Work Environment Express the Same Reality? *Psychology, 9*(8), 2175-2193. https://doi.org/10.4236/psych.2018.98124

Park, C. L. (2010). Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin, 136*(2), 257-301. https://doi.org/10.1037/a0018301

Proulx, T., Markman, K. D., & Lindberg, M. J. (2013). Introduction: The New Science of Meaning. In K. D. Markman, T. Proulx & J. Lindberg (Eds.), *The Psychology of Meaning* (pp. 3-14). American Psychological Association. https://doi.org/10.1037/14040-001

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, School, and Academic Achievment. *Econometrica, 73*(2), 417-458. https://doi.org/10.1111/j.1468-0262.2005.00584.x

Riel, J. (2008). *Taux d'attrition élevé, augmentation des cas d'épuisement professionnel: les conditions de travail en cause?* Résultats de l'analyse de l'activité de travail des enseignant(e)s du secondaire au Québec. Présentation faite lors des Journées de la prévention. Quebec. Abstract retrieved from https://docplayer.fr/131066187-Taux-d-attrition-eleve-augmentation-des-cas-d-epuisement-professionnel-les-conditions-de-travail-en-cause.html

Rodriguez, I., Jésus Bravo, M., Peiro, J. M., & Schaufali, W. (2001). The demands-control-support model, locus of control and job dissatisfaction: a longitudinal study. *Work & Stress, 15*(2), 97-114. https://doi.org/10.1080/02678370110066968

Roger, A., & Othmane, J. (2013). Améliorer l'équilibre professionnel et l'équilibre de vie: le rôle de facteurs liés à l'individu et au soutien hiérarchique. *@GRH, 6*(1), 91-115. https://doi.org/10.3917/grh.131.0091

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior, 30*, 91-127. https://doi.org/10.1016/j.riob.2010.09.001

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78. https://doi.org/10.1037//0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2001). To be happy or to be self-fulfilled: a review of research on hedonic and eudaimonic well-being. In S. Fiske (Ed.), *Annual Review of Psychology* (Vol. 52, pp. 141-166). Annual Reviews Inc. https://doi.org/10.1146/annurev.psych.52.1.141

Ryff, C. D. (2014). Psychological Well-Being Revisited: Advances in the Science and Practice of Eudaimonia. *Psychotherapy and Psychosomatics, 83*(1), 10-28. https://doi.org/10.1159/000353263

Ryff, C. D., & Keyes, C. L. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-727.https://doi.org/10.1037/0022-3514.69.4.719

Shepherdson, K. V. (1984). The meaning of work and employment: Psychological research and psychologists' values. *Australian Psychologist, 19*(3), 311-320. https://doi.org/10.1080/00050068408255437

Spreitzer, G. M., Kizilos, M. A., & Nason, S. W. (1997). A Dimensional analysis of the relationship between psychological empowerment and effectiveness, satisfaction, and strain. *Journal of Management, 23*(5), 679-704. https://doi.org/10.1016/S0149-2063(97)90021-0

Sartre, J. P. (1996). *L'existentialismeest un humanisme.* Gallimard.

St-Arnaud, L., Guay, H., Laliberté, D., & Côté, N. (2000). *Étude sur la réinsertion professionnelle des enseignantes et enseignants à la suite d'un arrêt de travail pour un problème de santé mentale.* Fédération des commissions scolaires du Québec.

Steger, M. F., Kashdan, T. B., Sullivan, B. A., & Lorentz, D. (2008). Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality, 76*(2), 199-228.https://doi.org/10.1111/j.1467-6494.2007.00484.x

Steger, M. F., Dick, B. J., & Duffy, R. D. (2012). Measuring meaningful work: the work and meaning inventory (WAMI). *Journal of Career Assessment, 20*(3), 322-337. https://doi.org/10.1177/1069072711436160

Truchot, D. (2004). *Epuisement professionnel et burnout. Concepts, modèles, interventions.* Paris: Dunod.

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia and hedonic enjoyment). *Journal of Personality and Social Psychology, 64*(4), 678-691. https://doi.org/10.1037/a0018301

Yalom, I. D. (1980). *Existential psychotherapy.* New York, NY: Basic Books. https://doi.org/10.1037/14040-001

Yzerbyt, V., Judd, C. M., Muller, D., & Batailler, C. (2018). New Recommendations for Testint Indirect effects in Mediational Model: The Need to Report and Test Component Path. *Journal of Personality and Social Psychology, 115*(6), 929-943. https://doi.org/10.1111/j.1468-0262.2005.00584.x

Notes

Note 1. Since the independent variable includes two modalities (perceived workload and hierarchical support), we have decomposed the direct effect (a) of the IV on M into two sub-effects: a_1 for the effect of workload and a_2 for the effect of hierarchical support on the direction of work.

Note 2. Here, we have equally decomposed the effect (c) de l' IV on the DV into two sub-effects: c_1 for the workload effect on the well-being at work and c_2 for the hierarchical support on the well-being at work.

Copyrights

The Effect of Despotic Leadership on Work Alienation with the Mediating of Work Boredom

Naser Nastiezaie[1], Anbarkhatun Vahdani[2], Asma Porki[2], Zahra Galavi[2] & Masoud Ramroudi[3]

[1] Department of educational administration and planning, Faculty of Education and Psychology, University of Sistan and Baluchestan, Zahedan, Iran

[2] Education Organization of Sistan and Baluchestan Province, Iran

[3] Higher education development planning, University of Kurdistan, Sanandaj, Iran

Correspondence: Naser Nastiezaie, Department of educational administration and planning, Faculty of Education and Psychology, University of Sistan and Baluchestan, Zahedan, Iran.

Abstract

The purpose of this study was to investigate the effect of despotic leadership on work alienation with the mediating of work boredom. This study was a correlation research method based on structural equation modeling. 253 teachers of Konarak (Iran) were studied by stratified random sampling method. To collect information, three questionnaires were used: despotic leadership, work alienation and work boredom. For data analysis the Pearson correlation coefficient and structural equation modeling were used by SPSS and Lisrel software. Based on results the direct effect of despotic leadership on work alienation, despotic leadership on work boredom and direct effect of work boredom on work alienation was positive and significant. The indirect effect of despotic leadership on work alienation was also significant with the mediator role of work boredom. Thus, school principals who use a despotic leadership style lead to the spread of organizational anomie in the school, and this organizational anomie in turn increase the deviant behaviors of teachers.

Keywords: despotic leadership, work alienation, work boredom

1. Introduction

Marx, a German philosopher, mentioned alienation for the first time. He defined work alienation as the result of the contradiction between the nature of the work role and human nature. Marx believed that all sources of alienation emanate from economic factors such as wages and division of labor. Accordingly, Marx stated that in today's industrial society, workers are alienated because they do not own either the product of their work or the act of production. Nowadays, special attention is paid to the concept of work alienation by scholars of various disciplines, such as labor and organizational psychology and labor sociology. However, there is a major difference between these views, that is, Marx mentioned objective work alienation (i.e., workers are alienated because they do not own the product of their work), but contemporary scholars have focused on mental work alienation, meaning that workers feel alienated from their work (Mehdad, Mehdizadegan, & Soosanabadi, 2015). Work alienation is a feeling on which a person's job is considered an external factor, and s/he does not feel internal independence in her/his work (Polatcan, 2020). Psychologically, the concept of work alienation roots in psychological states in which one feels suffering from psychological dissociation from his/her duties and responsibilities. Hence, they are not willing to establish or maintain their social relations (Farahbod, Azadehdel, Goudarzvand Chegini, & Ashraf, 2012). In 1959, Seeman introduced five main features of powerlessness, meaninglessness, normlessness, isolation, and self-estrangement. Then, between 1967 and 1991, he modified and adjusted the above features, and finally, by eliminating two features of normlessness and isolation, he considered three features for work alienation, which are accepted by most management experts (Bazmi, Haghighatian, Ansari, & Vahida, 2014). Self-alienated employees are a risk to organizations, and one-fifth of employees suffer from work alienation (Sharafi, Mehdad, & Fazel, 2017). Self-alienated employees think that they have simple, repetitive, and trivial works with no authority. In other words, they do not have job characteristics such as skill diversity, the identity of duty, importance of duty, independence, and feedback. Also, they are trying to take advantage of their works and avoid independence, accountability, and career promotion. In addition, they are not committed to any of their job areas (Amin Farahbakhsh, Salajeghe, & Ziaaddini, 2020). Studies showed that

work alienation causes low productivity (Al Hosain, Jabeen, Paul, & Stachowicz-Stanusch, 2020), organizational injustice (Rasti & Salajeghe, 2019), higher burnout, less organizational commitment (Akar, 2018), less job involvement (Kartel, 2018), mistrust, organizational pessimism (Li & Chen, 2018), feelings of futility, job dissatisfaction (Yumuk, 2017), absenteeism and leave of work (Gozukar, Mercanlı, Çapuk, & Yıldırım, 2017), feelings of powerlessness, isolation, loss of identity (Yilmas & Sarpkaya, 2009), lower work morality (Kralik & Jakobsen Tinley, 2017), lack of organizational citizenship behaviors (Dagli & Averbek, 2017), loneliness, and lower organizational health (Özer, Uğurluoğlu, Saygılı, & onğur, 2019). Also literature review showed that lack of independence, diversity and feedback, job enrichment, leadership style, organizational culture and structure, social support and work-family conflicts, job stress, satisfaction from the quality of life, consistency of individual-organization values, high workload, organizational structure, centralized decision-making, and rigid rules, policies, and procedures contribute to work alienation (Golparvar, Vaseghi, & Ashja, 2014, Taslimi, Bazargan, Musakhani, & Alvedari, 2011). In this study, two effective factors in work alienation, which have been less investigated by researchers, namely despotic leadership and work boredom are investigated.

Leadership style is one of the effective factors in job alienation, so that studies show that positive leadership styles, including transformational leadership, play a role in reducing job alienation (Damghanian & Hajkazemi, 2014). Despite the positive aspects and effectiveness of leadership, it should not be overlooked that, in reality, not all leaders are effective and of worthy qualities. This is where the dark side of leadership such as inefficient and harmful leadership occurs (Barani & Nastiezaie, 2020). Scholars mentioned various types of leadership's dark side, including despotic leadership, which is defined as the verbal and nonverbal hostilities of a supervisor against subordinates (Breevaart & De Vries, 2017). Despotic leadership is employees' understanding of the verbal and non-verbal hostility of their supervisor (Avey, Wu, & Holley, 2015). This kind of leadership roots in self-interest, along with dominance and despotic behaviors with others. Despotic leaders are hegemonic, intend to control the others, and vengeful; in contrast to moral leadership, this kind of leadership paves the way for the gradual weakening of employees in the psychological and organizational aspects (De Hoogh & Den Hartog, 2008). Key aspects of despotic leadership include the mental quality of employees concerning despotic behaviors, the persistence of hostility imposed by the leader, and the self-sustaining and purposive nature of mistreatment (Javed, Fatima, Yasin, Jahanzeb, & Rawwas, 2019). The despotic leaders, in particular, mistreat their subordinates because they have less power to stand against them. In addition, despotic and destructive leaders try to direct employees to achieve their goals without paying attention to the welfare of their subordinates (Aryee, Chen, Sun, & Debrah, 2007). Studies show that despotic supervision with job dissatisfaction, perceptions of injustice, mental and physical illness, job frustration, deviant behaviors and reduction of organizational citizenship behaviors (Tepper, Duffy, Henle, & Lambert, 2006), emotional exhaustion and decreased knowledge sharing behaviors (Lee, Kim, & Yun, 2018), immoral behaviors, organizational anomie, job alienation and normative conflict (Golparvar, Javadian, Salimian, Ismaili Ardestani, & Ahmadi, 2012), less efficiency, less productivity and less optimism of personnel (De Hoogh & Den Hartog employees, 2008) is related.

One of the possible consequences of despotic leadership is work boredom, which has attracted the attention of industrial and organizational psychologists, behavioral scientists, and social scientists in recent years. Work boredom is defined as a state of boredom or incompatibility with any kind of repetitive experience. It usually happens in situations where a repetitive measure must be performed. It is associated with symptoms such as feelings of boredom and fatigue, meaninglessness, emptiness, lack of interest, lack of communication, or lack of interaction with the work environment .Work boredom usually occurs in three stages: (a) stress arousal, which is due to irrational demands of clients; (b) formation and expansion of pessimistic attitudes toward clients and other people in the workplace; and (c) exhaustion. Emotional and physical arousal can also be added to these stages, which is one of the first symptoms (Cleary, Sayers, Lopez, & Hungerford, 2016). Work boredom is a characteristic of people who are engaged in dull and repetitive jobs and are submitted to the fact that their workplace has no space for improvement and progress (Cunha & Rego, 2009). This syndrome has been observed among a variety of relief Jobs, including counselors, social workers, doctors, police, and nurses. Almost all people have experienced work boredom at different times, regardless of the nature of their work, and this phenomenon is observed at all levels of various organizations in different countries (Sohail & Hussain, 2012) . Most employees who are prone to fatigue and boredom often experience uniform patterns in their working lives, and often experience a sense of relentless despair, loneliness, low energy levels, and lack of peace, and have lower levels of enthusiasm and interest than their colleagues. They also have little ability to plan or execute their duties properly, are less committed to their work and profession, which in turn causes gradual burnout, less creativity, and lower risk-taking and ultimately become indifferent to their jobs and organizations (Gibbs, 2011). Bored and indifferent people are not worried about the future because whatever they are concerned about, for them, there is no difference between the present, the future, and the past. They have a low level of

self-confidence and consider simplicity and confusion as defensive strategies (Danaeefard, Hassanzadeh, & Salarieh, 2010). Factors such as the mismatch between employees and work, doing repetitive and uniform tasks, feeling job insecurity, lack or insufficient excitement, the mismatch between the education level of employees and job descriptions, not receiving support from supervisors, friends, colleagues, family, and spouse, and poor management and weakness of feedbacks contribute to work boredom (Rimaz et al., 2020). In order to prevent work burnout, the job should be enriched in six ways: (1) Accountability; (2) Performance-based success; (3) providing feedback; (4) Freedom to perform tasks; (5) Performance control; and (6) Employee Growth and Improvement (Zeyaaddiny & Ramezani, 2013). Bakker and Demerouti (2008) found colleagues' and supervisors' support, performance feedback, diversity of duties, independence and learning opportunities and optimism, and self-confidence and self-esteem are among the resources that can reduce work boredom and increase employees' job engagement. Also Hackman and Oldham (1995) showed that variety of skills, duty identity, the importance of duty, independence, and feedback are the factors that reduce work boredom.

School management is one of the few important positions in the educational system, so that an incompetent principal reduces the effectiveness of the school programs. Today's schools require principals with very high characteristics, abilities, and skills to guide their organization according to the current situation, and the sole role of doing executive affairs is no longer acceptable. However, currently, many schools are poorly managed (Barani & Nastiezaie, 2020). In many schools, there are signs of destructive and despotic leadership, such as lack of clear goals for teachers and the principal, hostile relationships between the principal, teachers, students, and parents, strong emphasis on organizational rules and mission, mistrust and dishonesty in conversations, emphasis on working independently (instead of teamwork and participation), greater use of punishment, feelings of insecurity and lack of support, controlling interactions and conversations between colleagues, and being risk aversion (Epitropoulos, 2019). Such school principals cause work alienation and work boredom of teachers. The results of studies in Iran show that approximately 52.31% of teachers feel alienated from their jobs (Rastegar Khaled, Kaveh, & Mohammadi, 2014), 98% of school counselors suffer from job boredom syndrome (Rohani & Firouzi, 2010), mean job satisfaction of teachers is 59.8 of 95 (Ilanloo, Delavar, Shariatmadar, & Ahmadi, 2020), the mean boredom of teachers is 73.25 of 132 (Kazemi, Hossein Khanzadeh, Rasoulzadeh, & Mohammadi, 2020), the mean application of despotic leadership in schools is 33.73 of 70 and the mean tendency of teachers to leave their jobs is 8.22 of 15 (Barani & Nastiezaie, 2020). Despite the high prevalence of work alienation and work boredom in organizations, these issues have been less studied in educational organizations. Therefore, it is important to recognize work alienation and boredom and to investigate factors that contribute to these problems in order to find solutions. Considering the complex and multidimensional variables of despotic leadership and work alienation, it seems that the relationship between these two variables is not linear, and there are confounders that affect both of them. In the present study, by emphasizing what was mentioned before, we investigated the role of work alienation. Therefore, this study aimed to investigate the effect of despotic leadership on work alienation through the mediation of work boredom. This study addressed several research hypotheses:

1) Despotic leadership has a positive and significant effect on work alienation.
2) Despotic leadership has a positive and significant effect on work boredom.
3) Work boredom has a positive and significant effect on work alienation.
4) Despotic leadership has a positive and significant effect on work alienation with the mediating of work boredom.

The relationships between despotic leadership, work alienation and work boredom behaviors can be illustrated as follows:
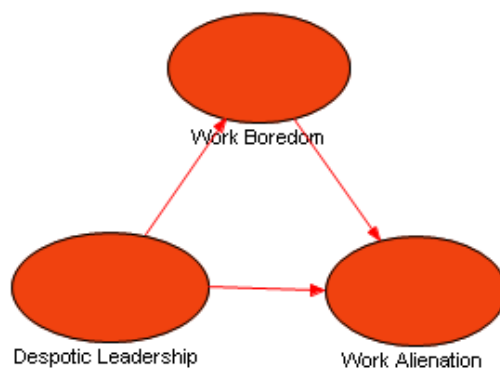
Figure 1. model of the research

2. Methods

The study is a cross-sectional survey based on structural equation model. The statistical population of the study was all teachers Konarak city in Iran in the academic year of 2020-2021 (N=850). 264 teachers were randomly selected by Cochran's sampling formula and were studied through questionnaires, of which 11 questionnaires were excluded due to lack of information and finally 253 questionnaires were analyzed.

2.1 Instrument

Three questionnaires were employed for collecting the data:

1) Despotic Leadership Questionnaire (De Hoogh & Den Hartog, 2008): The questionnaire consisted of 6 items. It was organized on the 5-point Likert scale from "quite disagree" to "quite agree", being represented by mean 1 and 5, respectively. The minimum and maximum means of the questionnaire were 1 and 5, respectively. The closer to 5 mean it is a sign of more use of despotic leadership style in the school. The reliability of the questionnaire based on Cronbach's alpha in the study of De Hoogh and Den Hartog (2008) was 0.82 and in this study was 0.76.

2) Work Alienation Questionnaire (Korman, Wittig Berman, & Lang, 1981): The questionnaire consisted of 8 items. It was organized on the 5-pint Likert scale from "quite disagree" to "quite agree", being represented by mean 1 and 5, respectively. The minimum and maximum means of the questionnaire were 1 and 5, respectively. The closer to 5 mean it is a sign of more work alienation. The reliability of the questionnaire based on Cronbach's alpha in the study of Korman et al. (1981) was 0.87 and in this study was 0.83.

3) Work Boredom Questionnaire (Reijseger, Schaufeli, Peeters, Taris, Van Beek, & Ouweneel, 2013): The questionnaire consisted of 8 items. It was organized on the 5-point Likert scale from "quite disagree" to "quite agree", being represented by scores 1 and 5, respectively. The minimum and maximum mean were 1 and 5, respectively. The closer to 5 mean it is a sign of more work boredom. The reliability of the questionnaire based on Cronbach's alpha in the study of Rimaz et al. (2020) was 0.87 and in this study was 0.81.

2.2 Data Analysis Technique

Descriptive statistics, including frequency, percentage, mean, standard deviation, skewness, and kurtosis, as well as inferential statistics, including Pearson correlation coefficient and structural equation modeling (SEM), used to analyze the data in SPSS 21 and LISREL.

3. Findings

Table 1 represents mean, standard deviation, Pearson correlation coefficient of variables.

Table 1. Mean and correlation coefficient of variables

Variable	Mean	SD	r		
			despotic leadership	work alienation	work boredom
despotic leadership	1.425	0.541	1		
work alienation	1.414	0.527	0.772**	1	
work boredom	1.396	0.499	0.716**	0.811**	1

**(p_value<0.001)

As shown in Table 1, a significant relationship observed between despotic leadership work alienation and work boredom (r=0.772 and 0.716, respectively), while work boredom was positively related to work alienation (r=0.811).

Moreover, a structural equation model used to test the relationship between the variables of the study.
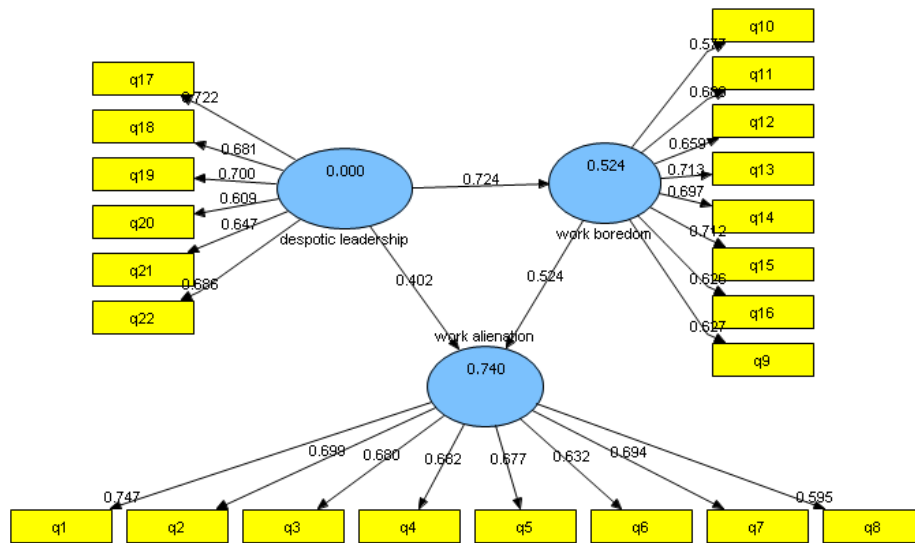

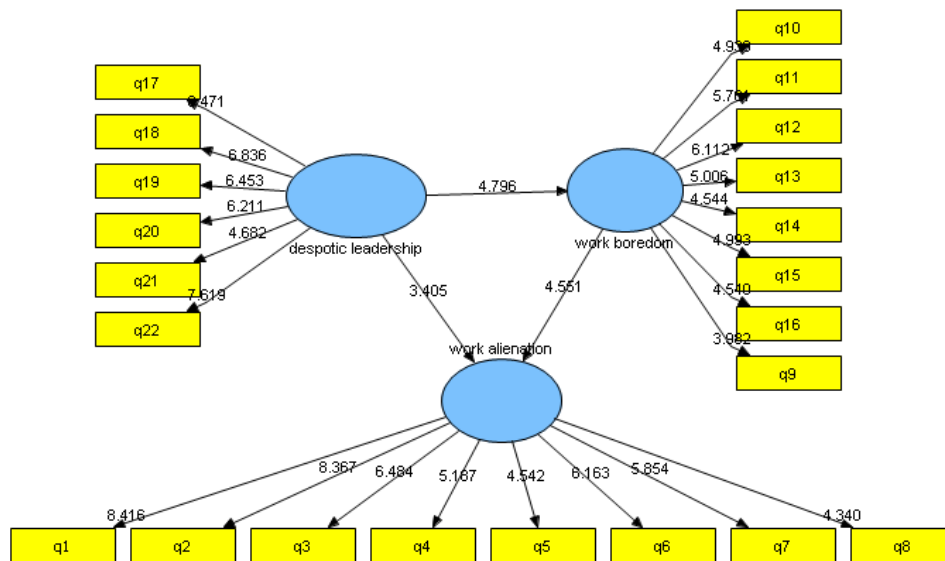Figure 2. Fitted research model (Standard Coefficients)

Figure 3. Fitted research model (T Coefficients)

According to the model (Figures 2 and 3), the research hypotheses can be analyzed as follows:

Table 2. Path coefficients for the study of research hypotheses

Hypotheses	Path coefficients	t	Conclusion
Despotic Leadership → Work Alienation	0.402	3.40	Accept
Despotic Leadership → Work Boredom	0.724	4.79	Accept
Work Boredom → Work Alienation	0.524	4.55	Accept
Despotic Leadership → Work Boredom → Work Alienation	0.379	3.29	Accept

According to the model and Table 2, the direct effect of despotic leadership on work alienation ($\beta=0.402$, t=3.40), the direct effect of despotic leadership on work boredom ($\beta=0.724$, t=4.79), and the direct effect of work boredom on work alienation ($\beta=0.524$, t=4.55) was positive and significant. Also, to investigate the indirect effect of despotic leadership on work alienation mediated by work boredom the Sobel test used. The Sobel t-test value was 3.29 (p-value = 0.001). Therefore, the indirect effect of of despotic leadership on work alienation mediated by work boredom ($\beta=0.379$, t=3.29) was also positive and significant.

4. Conclusion and Discussion

This study aimed to investigate the effect of despotic leadership on work alienation with the mediating of work boredom. The first finding showed that despotic leadership has a positive and significant effect on work alienation. Since in despotic leadership, the leader's behavior is inappropriate and contains indecent and inappropriate features such as character assassination, destruction, hypocrisy, exploitation and abuse, and other abusive behaviors, negative consequences such as harassment of employees, bullying, deceptive behavior, and all kinds of fraud and fraud are common in their workplace. Imposing additional and unfair workloads, hypocrisy, and the spirit of militancy among employees, reporting false statistics and figures, fabricating facts, and promoting aggressive and hegemonic behaviors are among prominent examples of this type of leadership (Nauman, Fatima, & Haq, 2018), which in turn cause the feeling of powerless, absurd, and alienation in the workplace among teachers Eidi Pour, Yosefy, Zardoshtian, & Eydi, (2020) argues that such a leadership approach causes organizational pessimism and works alienation of employees, at least. When managers use imperious leadership, they separate themselves from the employees and emphasize their power, so that they dictate their working methods to employees and make unilateral decisions. Therefore, such decisions can create conditions that limit employee's participation and increase their work alienation.

The second finding showed that despotic leadership has a positive and significant effect on work boredom. Despotic leaders use their power to control, influence, and persuade employees to perform tasks for their self-interest. These leaders are less willing to follow methods or observe ethical standards in order to achieve their personal goals. Besides, they constantly try to expand their dominance and control over employees, which in turn causes teachers' work boredom (Rasool, Naseer, Syed, & Ahmed, 2018). Despotic and destructive leaders not only do not care about the welfare of employees but also abuse and insult them. They also tend towards bullying behaviors, impose additional workload on employees and humiliate them. They do not tolerate constructive criticism, and by threatening others do not accept any questions or judgments about their actions and suppress any critical thinking (Golparvar et al., 2012), such cases can have a positive effect on teachers' work boredom. Despotic leaders, at an extensive scale, deliberately and hypocritically, use organizational power for their interests. They define and implement a certain type of relationship in the organization that destroys constructive working relationships and negatively affects the efficiency and functionalism in the organization, which in turn decreases teachers' work enthusiasm and causes work boredom (Erkutlu & Chafra, 2018).

Third finding showed that work boredom has a positive and significant effect on work alienation. When people feel that they are engaged in a dull and repetitive job and feel little hope for improvement and progress at their workplace, they feel boredom, meaninglessness, lack of interest, and lack of communication with the work environment, which in turn cause lower adaptation to the job. Eventually, these factors cause work boredom and present lower passion and commitment, which gradually results in resign. Most employees who are prone to fatigue and boredom experience more monotonous patterns in their work lives, and these people often experience feelings of restlessness, hopelessness, loneliness, low energy levels, and restlessness, and these people are less enthusiastic about activity. They benefit from their colleagues, who reduces the possibility of planning or performing the tasks assigned to the person correctly (Cunha et al., 2009) and increases the person's feeling of alienation from his work.

Fourth finding showed that despotic leadership anomie has a positive and significant effect on work alienation with the mediating of work boredom. Golparvar et al. (2012) conclude that by violating human values and moral principles, despotic leaders pave the way for overt and hidden humiliation of the employees, which causes an internal feeling of being a worthless, chaotic, and organizational anomie. De Lara, Tacoronte and Ting Ding (2009) conclude that the sense of being ignored and injustice, which can be interfered with from the behavior of non-moral leaders, can seriously cause a sense of normative disorder and normative conflict. Despotic and destructive leaders by showing inappropriate behavior and being disrespectful to employees, aggression, and threats, disrespect for clients, conflicting behaviors, dishonesty, misreporting, ignoring their promises, excessive control even concerning minor matters, lack of trust in employees, undesirable political behavior, despotic and destructive leaders follow their personal promotion. Creating a system that encourages flattering, narcissism, pride, and claim, inattentiveness, insisting on their positions, not respecting others opinions, lack of expertise and poor communication skills, weak decision-making, misuse of organizational resources, personal use of organizational resources, lack of justice, waste of organizational resources, and pressure on employees (Khorasani Toroghi, Rahimnia, Malekzade, & Mortazavi, 2018) Provides job dissatisfaction and job boredom for teachers. Those who interact with a despotic and destructive leader are more likely to have a negative judgment concerning their relationship with the organization, which in turn undermines their value about their jobs or causes declined royalty (Gallus, Walsh, Van Driel, Gouge, & Antolic, 2013) and as a result, they will have more work alienation. Heppell (2011) States that despotic and destructive leaders do not have the necessary competence; indeed, they are incompetent and are not self-confident, feel fear and insecurity, have a low level of conscience and a high level of dependence, are inflexible, and do not have a sense of philanthropy. In addition, they have gained their authority and power by force and are inclined to decisive control over individuals and the workplace, which causes them not paying attention to novel ideas. They are impatient, grumpy, spiteful, incompetent, and law-breaking. Besides, they have unwise emotions and have a psychological potential for deviant behaviors. Thus despotic and destructive leaders cause work boredom and work alienation.

Overall, the findings showed that despotic leadership has a direct and indirect effect, with the mediation of work boredom, on teachers' work alienation. Therefore, it is recommended to the top managers of the education organization by carefully selecting committed and ethical people as the school principal (leader), work boredom and work alienation of teachers can be prevented. It is also suggested to school principals that adherence to school rules, ethics, and norms, not pursuing personal interests, lack of humiliation, not threatening teachers, supporting teachers, and establishing desirable human relationships can play a role in reducing work boredom and work alienation of teachers. Since this study was conducted on teachers working in the City of Konarak, Iran, caution should be taken when generalizing the findings. Also, the authors recommend performing mixed studies (qualitative and quantitative) in the future.

References

Akar, H. (2018). The Relationships between Quality of Work Life, School Alienation, Burnout, effective Commitment and Organizational Citizenship: A Study on Teachers. *European Journal of Educational Research, 7*(2), 169-180. https://doi.org/10.12973/eu-jer.7.2.169

Al Hosani, Y., Jabeen, F., Paul, J., & Stachowicz-Stanusch, A. (2020). Antecedents of employee alienation and its impact on individual work performance during post-merger integration (PMI). *Journal of Organizational Change Management, 33*(6), 1085-1110. https://doi.org/10.1108/JOCM-03-2020-0085

Amin Farahbakhsh, A., Salajeghe, S., & Ziaaddini, M. (2020). Educational method to investigarte the Relationship between Organizational Climate and Deviant Behaviors with the Mediation of Job Alienation Variable (Case Study: National Iranian Copper Industries Company). *Revista Tempos E Espaços Em Educação, 13*(32), 1-15. https://doi.org/10.20952/revtee.v13i32.13179

Aryee, S., Chen, Z. X., Sun, L., & Debrah, Y. A. (2007). Antecedents and outcomes of abusive supervision: Test of a trickle-down model. *Journal of Applied Psychology, 92*(1), 191-201. https://doi.org/10.1037/0021-9010.92.1.191

Avey, J. B., Wu, K., & Holley, E. (2015). The influence of abusive supervision and job embeddedness on citizenship and deviance. *Journal of Business Ethics, 129*(3), 721-731. https://doi.org/10.1007/s10551-014-2192-x

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International, 13*(3), 209-223. https://doi.org/10.1108/13620430810870476

Barani, F., & Nastiezaie, N. (2020). The Study of the Impact of Destructive Leadership on Teachers' Desire to Quit Serving with Mediating Role of Organizational Injustice. *Journal of School Administration, 8*(1), 231-258. Retrieved from https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=831609

Bazmi, M., Haghighatian, M., Ansari, M., & Vahida, F. (2014). Sociological Assessment of Job Alienation and its Impacts on Organizational Culture in Educational Organizations (the Case of Educational Staff in Mashhad). *Journal of Applied Sociology, 25*(2), 1-14. Retrieved from https://jas.ui.ac.ir/article_18365.html?lang=en

Breevaart, K., & de Vries, R. E. (2017). Supervisor's HEXACO personality traits and subordinate perceptions of abusive supervision. *The Leadership Quarterly, 28*(5), 691-700. https://doi.org/10.1016/j.leaqua.2017.02.001

Cleary, M., Sayers, J., Lopez, V., & Hungerford, C. (2016). Boredom in the Workplace: Reasons, Impact, and Solutions. *Issues in Mental Health Nursing, 37*(2), 83-89. https://doi.org/10.3109/01612840.2015.1084554

Cunha, M. P. E., Cunha, R. C. E., & Rego, A. (2009). Exploring the Role of Leader--Subordinate Interactions in the Construction of Organizational Positivity. *Leadership, 5*(1), 81-101. https://doi.org/10.1177/1742715008098311

Dagli, A., & Averbek, E. (2017). The Relationship between the Organizational Alienation and the Organizational Citizenship Behaviors of Primary School Teachers. *Universal Journal of Educational Research, 5*(10), 1707-1717. https://doi.org/10.13189/ujer.2017.051006

Damghanian, H., & Hajkazemi, M. (2014). The Effect of Transformational Leadership on Work Alienation. *Iranian Journal of Insurance Research, 29*(2), 89-112. Retrieved from https://jir.irc.ac.ir/m/article_7286.html?lang=en

Danaeefard, H., Hassanzadeh, A. R., & Salarieh, N. (2010). Exploring Organizational Indifference: Creating and Validating a Measure. *Strategic Management Thought, 4*(2), 79-99. Retrieved from https://doi.org/10.30497/SMT.2010.145

De Hoogh, A. H. B., & Den Hartog, D. N. (2008). Ethical and despotic leadership, relationship with leaders' social responsibility, top management team effectiveness and subordinates optimism: A multi method study. *The Leadership Quarterly, 19*(3), 297-311. https://doi.org/10.1016/j.leaqua.2008.03.002

De Lara, P. Z., Tacoronte, D. V., & Ting Ding, J. M. (2009). Procedural justice and workplace deviance: The mediating role of perceived normative conflict in work groups. *Decisions Organization, 1*(2009), 381-393. Retrieved from https://www.researchgate.net/publication/28200628_Procedural_justice_and_workplace_deviance_the_mediating_role_of_perceived_normative_conflict_in_work_groups

Eidi Pour, K., Yosefy, B., Zardoshtian, S., & Eydi, H. (2020). Effect of Toxic Leadership Style on Organizational Cynicism and Job Alienation of Staff in the Sports and Youth Ministry of Iran with a Mediating Role of Machiavellianism. *Sport Management Studies, 12*(59), 135-152. Retrieved from https://doi.org/10.22089/SMRJ.2018.5378.2060

Epitropoulos, A. (2019). 10 Signs of a Toxic School Culture. *Education Update, 61*(9), 41. Retrieved from https://www.ascd.org/el/articles/10-signs-of-a-toxic-school-culture

Erkutlu, H., & Chafra, J. (2018). Despotic leadership and organizational deviance: The mediating role of organizational identification and the moderating role of value congruence. *Journal of Strategy and Management, 11*(2), 150-165. https://doi.org/10.1108/JSMA-04-2017-0029

Farahbod, F., Azadehdel, M. R., Goudarzvand Chegini, M., & Ashraf, A. N. (2012). Work alienation: Historical backgrounds, concepts, reasons and effects. *Journal of Basic and Applied Scientific Research, 2*(8), 8408-8415. Retrieved from https://scholar.google.com/scholar?cluster=7876411366139594892&hl=en&oi=scholarr

Gallus, J. A., Walsh, B. M., Van Driel, M., Gouge, M. C., & Antolic, E. (2013). Intolerable cruelty: A multilevel examination of the impact of toxic leadership on US military units and service members. *Military Psychology, 25*(6), 588-601. https://doi.org/10.1037/mil0000022

Gibbs, P. (2011). The Concept of Profound Boredom: Learning from Moments of Vision. *Studies in Philosophy and Education, 30*(6), 601-613. https://doi.org/10.1007/s11217-011-9256-5

Golparvar, M., Javadian, Z., Salimian, N., Ismaili Ardestani, Z., & Ahmadi, A. (2012). Relationship between Despotic leadership and Immoral Behaviors: An Approach to Normative Pathological Systems, A case study in an industrial and manufacturing organization. *Journal of Management Improvement, 6*(2), 4-22. Retrieved from https://www.behboodmodiriat.ir/article_42786.html?lang=en

Golparvar, M., Vaseghi, Z., & Ashja, A. (2014). Explaining the relationship between stress with alienation and deviant behaviors on the basis of the moderating role of cognitive attribution of causes of stress. *Contemporary psychology, 9*(1), 71-82. Retrieved from https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=417854

Gozukara, İ., Mercanlı C., Çapuk, S., & Yıldırım, O. (2017). Impact of Turnover Intention on Loneliness and the Mediating Effect of Work Alienation. *Business Management and Strategy, 8*(1), 18-38. https://doi.org/10.5296/bms.v8i1.10521

Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology, 60*(2), 159-170. https://doi.org/10.1037/h0076546

Heppell, T. (2011). Toxic leadership: Applying the Lipman-Blumen model to political leadership. *Journal of Representative Democracy, 47*(3), 241-249. https://doi.org/10.1080/00344893.2011.596422

Ilanloo, H., Delavar, D., Shariatmadar, D., & Ahmadi, D. (2020). The efectivness of teaching existential consciousness on teachers' life quality and job satisfaction. *Quarterly Journal of Education Studies, 6*(22), 1-13. Retrieved from https://researchbt.cfu.ac.ir/article_1166.html?lang=en

Javed, B., Fatima, T., Yasin, R. M., Jahanzeb, S., & Rawwas, M. Y. (2019). Impact of abusive supervision on deviant work behavior: The role of Islamic work ethic. *Business Ethics, the Environment & Responsibility, 28*(2), 221-233. https://doi.org/10.1111/beer.12212

Kartel, N. (2018). Evaluating the relationship between work engagement, work alienation and work performance of healthcare professionals. *International Journal of Healthcare Management, 11*(3), 251-259. https://doi.org/10.1080/20479700.2018.1453969

Kazemi, N., Hossein Khanzadeh, A., Rasoulzadeh, V., & Mohammadi, S. (2020). The effectiveness of Mindfulness Education on Job Burnout and Educational Optimism in primary school teachers. *Career and Organizational Counseling, 12*(43), 51-72. https://doi.org/10.52547/JCOC.12.2.51

Khorasani Toroghi, H., Rahimnia, F., Malekzade, Gh., & Mortazavi, S. (2018). Exploring the Components of Destructive Behaviors of Unethical Leaders. *Ethics in Science and Technology, 13*(1), 38-47. Retrieved from https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=734877

Korman, A., Wittig-Berman, U., & Lang, D. (1981). Career Success and Personal Failure: Alienation in Professionals and Managers. *Academy of Management Journal, 24*(2), 342-360. https://doi.org/10.5465/255846

Kralik, R., & Jakobsen Tinley, S. (2017). Kierkegaard's Ethics as an Answer to Human Alienation in Technocratic Society. *Communications - Scientific Letters of the University of Zilina, 19*(1), 25-29. https://doi.org/10.26552/com.C.2017.1.25-29

Lee, S., Kim, S. L., & Yun, S. (2018). A moderated mediation model of the relationship between abusive supervision and knowledge sharing. *The Leadership Quarterly, 29*(3), 403-413. https://doi.org/10.1016/j.leaqua.2017.09.001

Li, S., & Chen, Y. (2018). The Relationship Between Psychological Contract Breach and Employees' Counterproductive Work Behaviors: The Mediating Effect of Organizational Cynicism and Work Alienation. *Frontiers in Psychologhy, 9*, 1273. https://doi.org/10.3389/fpsyg.2018.01273

Mehdad, I. Mehdizadegan, & Soosanabadi, M. (2015). Do Components of Psychological Healthy work Place Predict Dimensions of Job Alienation? *Journal of Career and Organization Consulting, 7*(23), 9-27. Retrieved from https://www.sid.ir/en/journal/ViewPaper.aspx?ID=542689

Nauman, S., Fatima, T., & Haq, I. U. (2018). Does Despotic Leadership Harm Employee Family Life: Exploring the Effects of Emotional Exhaustion and Anxiety. *Frontiers in Psychology, 9*, 601. https://doi.org/10.3389/fpsyg.2018.00601

Özer, Ö., Uğurluoğlu, Ö., Saygılı, M., & Sonğur, C. (2019). The impact of work alienation on organizational health: A field study in health sector. *International Journal of Healthcare Management, 12*(1), 18-24. https://doi.org/10.1080/20479700.2017.1312804

Polatcan, M. (2020). The Effect of Servant Leadership on Teacher Alienation: The Mediating Role of Supportive School Culture. *International Online Journal of Educational Sciences, 12*(3), 57-67. https://doi.org/10.15345/iojes.2020.03.005

Rasool, Gh., Naseer, S., Syed, F., & Ahmed, I. (2018). Despotic leadership and employee's outcomes: Mediating effect of impression management. *Pakistan Journal of Commerce and Social Sciences, 12*(3), 784-806. Retrieved from https://www.econstor.eu/handle/10419/193447

Rastegar Khaled, A., Kaveh, M., & Mohammadi, M. (2017). Social Capital and Alienation (Case study of primary school teachers in Tehran). *Social Capital and Alienation, 6*(19), 203-251. Retrieved from https://qjsd.atu.ac.ir/article_687.html?lang=en

Rasti, A., & Salajeghe, S. (2019). The relationship between job stress and employees' alienation with mediating role of organizational justice in the Social Security Organization in Razavi Khorasan, North Khorasan and South Khorasan provinces. *Revista Inclusiones, 6*(S1), 92-102. Retrieved from https://revistainclusiones.org/index.php/inclu/article/view/2017

Reijseger, G., Schaufeli, W. B., Peeters, M. C., Taris, T. W., Van Beek, I., & Ouweneel, E. (2013). Watching the paint dry at work: psychometric examination of the Dutch Boredom Scale. *Anxiety, Stress & Coping, 26*(5), 508-525. https://doi.org/10.1080/10615806.2012.720676

Rimaz, Sh., Alimohammadi, I., Abolghasemi, J., Gholami, A., Mokhtari, M., Varse, F., Taheri, F., & Moradi, Y. (2020). Psychometric properties of a Farsi version of the Dutch Boredom Scale Questionnaire (DUBS) in Iranian University of Medical Sciences. *Iran Occupational Health Journal, 17*(1). Retrieved from https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=840080

Shahinpoor, N., & Matt, B. F. (2007). The Power of One: Dissent and Organizational Life. *Journal of Business Ethics, 74*, 37-48. https://doi.org/10.1007/s10551-006-9218-y

Sharafi, L., Mehdad, A., & Fazel, A. (2017). The Relationship Between Job Characteristiscs and Organizational Justice Dimensions with Job Alienation. *Knowledge & Research in Applied Psychology, 14*(53), 51-59. Retrieved from https://jsr-p.khuisf.ac.ir/article_533882.html?lang=en

Sohail, N., & Hussain, Z. (2012). Workplace Boredom among University Faculty Members in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business, 3*(10), 919-925. Retrieved from https://journal-archieves15.webs.com/919-925.pdf

Taslimi, M., Bazargan, A., Musakhani, M., & Alvedari, H. (2011). Preparing a Model for development of the Transformational leadership in the Universities, concerning the modification of the self –estrangement in business. (Case: Payam e Nur University). *Journal of Public Administration, 3*(8), 19-38. Retrieved from https://jipa.ut.ac.ir/article_24787.html?lang=en

Tepper, B., Duffy, M., Henle, C., & Lambert, L. (2006). Procedural injustice, victim precipitation, and abusive supervision. *Personnel Psychology, 59*(1), 101-123. https://doi.org/10.1111/j.1744-6570.2006.00725.x

Yilmas, S., & Sarpkaya, P. (2009). Alienation in Educational Organization and Its Management. *International Journal of Human Science, 6*(2), 314-333. Retrieved from https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/725

Yumuk, G. (2017). The Relationship among Perceived Organizational Support, Job Satisfaction, and Alienation: An Empirical Study on Academicians. *International Journal of Business and Social Science, 8*(1), 96-106. Retrieved from https://www.semanticscholar.org/paper/The-Relationship-among-Perceived-Organizational-%2C-%2C-Yumuk/f38dba70dce30f0f9f42587286a60fdc224ac7fa

Zeyaaddiny, M., & Ramezani, S. (2013). Job Enrichment and Job Engagement for Propensity to Leave of Employees. *Journal of Strategic Management Studies, 4*(15), 177-199. Retrieved from https://www.smsjournal.ir/&url=http://www.smsjournal.ir/article_90605.html?lang=en

Copyrights

Transfer Behaviour: Is Intention or Memory First?
A Model of the Nearest Training Transfer Antecedents

Saeed Khalifa Alshaali[1], Kamal Ab Hamid[2] & Ali Ali Al-Ansi[2,3]

[1] School of Business Management, College of Business, University Utara Malaysia, Malaysia

[2] School of Accountancy, College of Business, University Utara Malaysia, Malaysia

[3] College of Business Administration, Shaqra University, Kingdom of Saudi Arabia

Correspondence: Saeed Khalifa Alshaali, School of Business Management, College of Business, University Utara Malaysia, Malaysia.

Abstract

In real life, there is a relationship between a person's intention and memory. In addition, both are crucial antecedents of behaviour. This study puts this concept under empirical analysis. Additionally, high loss of training memory (50% after 24 hours) is a critical problem. Therefore, a weak understanding of intention and memory unity (interchangeable relationship) would exaggerate the transfer behaviour problem. It should be noted that billions of dollars are lost because of the low training implications (transfer). In that context, the researchers raise the question of 'what comes first: intention or memory?' and conduct a holistic statistical analysis. They apply a quantitative method (self-report survey) to test five hypotheses of this study's variables: (i) intention to transfer (behaviour), (ii) training retention (memory), (iii) training transfer (behaviour). The study participants are 425 (population = 52,000) governmental (ministries) employees. The researchers derive and adapt the study questionnaire from reliable resources. They apply statistical analysis using PLS-SEM – SmartPLS software 3.0. All five hypotheses are accepted. This shows a highly interchangeable role of intention and memory against behaviour. However, the results analysis reveals that intention comes first, with a prominent presence of memory. Practically, it is suitable to understand intention and memory in combination, especially in the design phase. This would enhance the professionalism of behaviour control and effectiveness. For the theoretical tendency of the current study, the managerial implication is challenging. However, it opens the door for other interested researchers to specify a clear and smart solution for this case. In addition, this study has several values. It reconciles two theories in different fields: transfer model (training) with theory of planned behaviour (psychology). Mainly, it empirically describes the relationship between the most important behaviour antecedents (intention and memory). It helps to solve two practical problems: low training implication and high loss of training memory.

Keywords: training transfer, intention, behaviour, training retention, memory, theory of planned behaviour

1. Introduction

Implementation of training in the workplace, often termed 'training transfer', is a focus for many researchers and professionals internationally (Baldwin & Ford, 1988; Bhatti et al., 2013). Training implementation (transfer) is a preceding agent of organisational performance (Baldwin & Ford, 1988; Kirkpatrick, 1959).

In real life, there is a relationship between a person's intention and memory. Logically, they both affect each other in some way. Self-evident reasoning can justify this relationship. This study puts this concept under empirical analysis. The researchers investigate mainly 'the interchangeable relationship (overlapping) between intention to transfer and training retention; towards transfer behaviour'. Thus, they raise a question: 'What comes first, intention or memory, towards transfer behaviour?' (Figure 1). In practice, this investigation enhances the ability of practitioners and managers to understand the art of intentions and memory for specific targeted stockholders (trainees, customers, tourists, etc.).

These researchers investigate the interplay between two closely related concepts: (i) the training transfer model and (ii) the theory of planned behaviour (TPB). This hybrid model (theory triangulation) would enhance our understanding of the transfer situation. Rather than discussing the training transfer model (Baldwin & Ford, 1988)

and TPB (Ajzen, 1991) holistically, these researchers focus exclusively on the direct (close) antecedents and influencers of trainee behaviour: trainee intention and trainee memory. In this study, trainee intention is termed 'intention to transfer', and trainee memory is termed 'training retention'. The training transfer model includes training memory, but it does not use intention as one of its main constructs. Likewise, intention is a central construct in TPB, but it does not include memory as one of its constructs.

The 'transfer problem' (Baldwin & Ford, 1988) results in poor application of training in the workplace. What is applied in the workplace is just 10%-27% (Arthur et al., 2003; Chartered Institute of Personnel and Development, 2015; Ford, 2009; Georgenson, 1982; Griffin, 2010; Industry Report, 2000). These surprisingly low rates of workplace training application reconcile with high levels of recorded training expenditure, with annual training expenditure running at approximately $100 billion in the United States, £38.6 billion in the United Kingdom, and 28.6 billion euros in Germany (American Society for Training and Development, 2006; Griffin, 2010; Seyda & Werner, 2012).

An additional practical problem in training transfer is the 'loss of training memory', often termed 'training retention'. According to Blanchard (2013), 50% of newly acquired skills and knowledge are lost within 24 hours of receiving training. Furthermore, according to Ebbinghaus (1964), only 33% of newly acquired information is retained by the trainee 1 day after training, which further reduces to only 21% after 1 month. These estimates demonstrate the serious levels of training memory loss (Ritter et al., 2011).

This study Mainly fills the literature gap related to the interchangeable relation between memory and intention. The researchers applied this in a theoretical stage (psychology) and in the practical context (mainly training transfer) and other fields such as tourism. Then they applied a specific methodology to fulfil the study's main purpose.
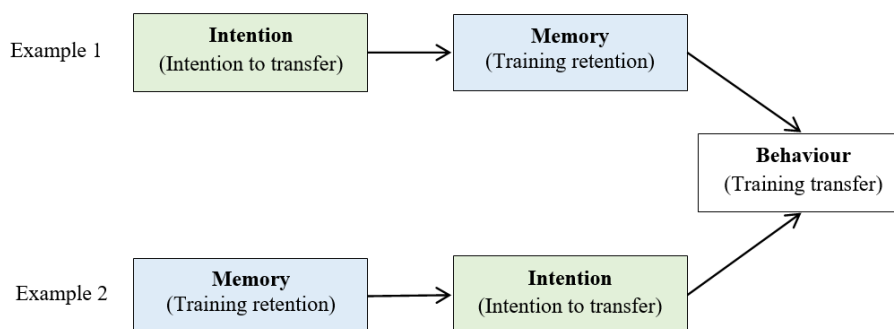

Figure 1. Interchangeable relation between memory and intention

This diagram describes two examples, related to the paper question. Example 1: A trainee who has an intention to apply training, he/she could not apply it; until he/she remembers the training event. Example 2: A trainee who remembers the training event, but he/she did not have an intention to apply training, consequently the transfer behaviour will fail. Generally, this figure clarifies the interplay between memory and intention.

2. Study Theory

The purpose of developing a theory is to understand, constitute (model), or test a phenomenon (Bryman & Bell, 2011; Creswell, 2013; Kerlinger, 1979). The researcher considers three types of theory (and model) in this study: (i) transfer model, (ii) TBP, and (iii) forgetting theory. Baldwin and Ford, in 1988, developed one of the most cited training transfer models after a comprehensive review of more than 40 studies (Baldwin & Ford, 1988; Blume et al., 2010; Grossman & Salas, 2011). Their training transfer model consists of 'trainee characteristics', 'training design', 'work environment', 'learning and retention', and 'generalisation and maintenance'.

The underpinning theories used in this study are the TPB (Ajzen, 1991), which is associated with 'intention to transfer', and the forgetting theory (Ebbinghaus, 1964), which is linked to 'training retention'. These theories are used to support the illustration of the study variables, thus advancing the understanding of the practical dimension of the conceptual model of this paper. It should be noted that forgetting theory is included in this study as a secondary supportive theory.

Cheng and Hampson (2008) mentioned that the TBP may help both academics and practitioners to understand training transfer. Indeed, many researchers depend on TBP to theorise their insights into training transfer processes (Al Eisa et al., 2009; Cheng & Ho, 1998; Cheng et al., 2015; Davis et al., 2002; Posthuma & Dworkin, 2000; Wiethoff, 2004). Fundamentally, TPB predicts behaviour (Davis et al., 2002); in this paper, the behaviour construct is represented as training transfer. Therefore, TPB can be used to explain transfer behaviour (Cheng et al.,

2015), and in particular, it can be used to explain training intention in relation to training transfer (Miller et al., 1960).

Generally, TPB consists of five constructs: (i) attitudes towards behaviour, (ii) subjective norms, (iii) perceived behavioural control, (iv) intentions, and (v) behaviour (Ajzen, 1991). When linking TBP to this study, the dominant underpinning factor is the intention construct, followed by the training transfer construct. Ajzen and Fishbein (2005) defined intention as representing the belief that a person will behave in a specific manner. It should be noted that, in the context of TBP, behaviour construct is associated with the training transfer (dependent variable) in the current study.

In general, behaviour is a complex construct; it is an activity in which a person may engage, and it is either observed or unobserved (Donahoe & Palmer, 1994). Owing to its complexity, it is not a simple matter to define or to quantify behaviour. Indeed, Ajzen and Fishbein (1980) described behaviour as an action that has a number of dimensions. Because, in this paper, the behaviour construct is represented as training transfer, it is useful to apply the detailed descriptions and dimensions of behaviour as described by Ajzen and Fishbein (1980). The complexity of transfer behaviour urges for more reliance on a behavioural theory. Thus, the researchers adopted TPB in this study because it plays a fundamental role in explaining the trainee intention and trainee behaviour correlation, particularly after the delivery of a training program.

3. Literature Review

The authors will start the literature review by illustrating the dependent variable (training transfer), thus getting straight to the core issue addressed in this paper. They will introduce and analyse each variable according to its fundamental identification and principles, identifying gaps in the literature for each variable.

3.1 Training Transfer

Put simply, training transfer is a specific behaviour (Kirkpatrick, 1959; Kraiger, 2002) that represents the behaviour of the trainee after attending a training program; it is the main dependent component of the training transfer model (Baldwin & Ford, 1988).

Despite several attempts to theorise the training transfer process (Baldwin & Ford, 1988; Holton, 1996, 2005; Kavanagh, 1998; Tracey et al., 1995), some scholars have called for intensified investigations (Bhatti & Kaur, 2010; Grossman & Salas, 2011). Indeed, training transfer is a complex process (Al-Eisa et al., 2009; Baldwin & Ford, 1988), and, despite the addition of new variables by a number of authors (for example, see Holton et al., 2000), the field remains highly active, particularly in different contexts and cultures (Dirani, 2011; Holton, 1996; Holton et al., 2000; Simosi, 2012). Taken as a whole, the field of training transfer has not yet reached full maturity, and this impedes its practical implementation in the workplace (Grossman & Salas, 2011; Kauffeld & Lehmann-Willenbrock, 2010).

3.2 Intention to Transfer

Many researchers have identified intention to transfer with relation to training transfer or transfer behavior (Al-Eisa et al., 2009; Cheng et al., 2015; Gegenfurtner et al., 2013; Rangel et al., 2015; Reynolds, 1993). Additionally, Blume et al. (2019) suggested considering intention as one of the main dynamic pillars of the transfer model. This confirms the importance of intention in the training transfer context.

When considering training transfer as a 'behaviour' (Kirkpatrick, 1959; Kraiger, 2002), intention to transfer is fundamentally relevant to transfer, especially when referring to the TPB (Ajzen, 1991). Thus, a holistic recognition of intention is associated with recognition of training transfer (Rangel et al., 2015). Intention to transfer is an essential precondition to the transfer process (Al-Eisa et al., 2009; Foxon, 1993; Grohmann et al., 2014). In the psychology context, the view of intention to transfer as the closest driver of training transfer is confirmed by Ajzen's (1991) theory (TPB). In the training transfer domain, Jaidev (2018) found that intention to transfer is positively associated with training transfer.

The inadequate investigation of the intention construct in the training transfer model is apparent in the transfer literature (Al-Eisa et al., 2009; Cheng & Hampson, 2008) to the extent that it is unclear how intention influences or promotes each stage of the transfer process (Al-Eisa et al., 2009). Few scholars measure the impact of the intention construct on the transfer process, or even as an antecedent of training effectiveness (Al-Eisa et al., 2009; Foxon, 1993).

There are, to the best of these authors' knowledge, no recent studies on the relationship between intention to transfer and training retention, mainly in the training transfer literature. It should be noted that a few authors mention this relationship in a highly general sense (for example, see Gegenfurtner et al., 2013; Miller et al., 1960).

In other domains, this relation is a concern in psychiatric illness; it appears that intention (implementation intention) has an effect on schizophrenia patients' memory (prospective memory) (Chen et al., 2019).

The present study complements the current literature in that the authors use cognitive psychology to fill the gap in knowledge regarding the relationship between intention to transfer and training retention. In so doing, they demonstrate that the cognitive components of retention (memory) and attention interact (Figure 2). Retention (memory) can be regarded as being partially represented by attention, and it is common that attention and memory are closely related (Unsworth & Engle, 2007).

Cognitive ability consists of three components: memory, attention, and executive function (Owen et al., 2010). Thus, intention and attention are inherently linked (Shapiro et al., 2006). It is expected that a trainee who has a strong intention to apply training would pay a considerable level of attention during training; this would, in turn, improve their memory of the training content. Supporting this notion, Bird (1988) indicated that intention directs attention towards a certain matter.

Specifically, intentions have a robust relation with long-term memory (Achtziger et al., 2012). Moreover, intention affects working memory (Meeks et al., 2015). Marsh et al. (1998) mentioned that, when intention is cancelled, memory is inhibited. Likewise, Chasteen et al. (2001) concluded that intention facilitates memory. Away from the traditional view of memory, retention is not only a process of forgetting matter through time but also a complex phenomenon related to several factors (Arthur & Day, 2020). The current researchers assume that intention is one of these factors.
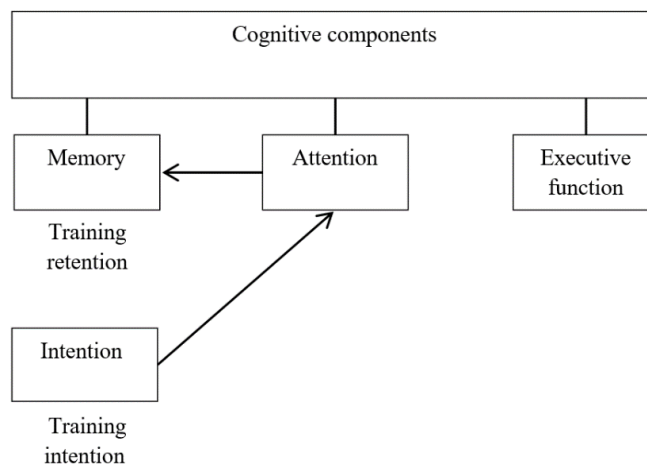

Figure 2. Relationship between training intention and training retention (memory) according to cognitive psychology (Unsworth & Engle, 2007)

3.3 Training Retention

The identification of training retention requires a specific psychological concept in the training transfer process. In psychology, 'retention' is one of a group of terms related to memory (Deffenbacher et al., 2008; Ong & Tasir, 2015; Sakul-Thanasakdi, 2001); in training transfer, retention is represented as the level at which training content is remembered (Velada et al., 2007).

It is important to gain an advanced understanding of the notion of retention by first describing a number of psychological perspectives. Training retention represents the retention of training competencies in memory (Velada et al., 2007). Put simply, training retention represents the process of remembering a training activity (Ong & Tasir, 2015; Velada et al., 2007). Additionally, it is a fundamental promoter of behaviour (Pierce & Cheney, 2013). Thus, retention, or learning memorisation, is a matter of serious and international concern (Austin, 2009; Burke & Hutchins, 2007; Ritter et al., 2011; Wexley & Latham, 2002).

Several authors have noted that training retention is positively and directly related to training transfer (Baldwin & Ford, 1988; Bhatti et al., 2013; Govaerts & Dochy, 2018). This is consistent in other fields, such as tourism management, in which tourism memories are significantly related to intention (Kim et al., 2022). For instance, tourism photographs have a significant reflection on autobiographical memory and ultimately have an effect on revisit intention (Zhang et al., 2021).

Likewise, other researchers have assumed that an ineptitude for training transfer is a consequence of poor training retention (May & Kahnweiler, 2000). When seeking literature that supports training transfer theory, Bhatti et al. (2013) noted a sparsity of studies dealing with training retention, reflecting similar observations made previously

by Bhatti and Kaur (2010). Holistically, retention research that relates to complex skills is limited, specifically outside the medical field (Vlasblom et al., 2020). Thus, in studying training retention, this paper's authors make an important contribution to the scant training transfer literature.

3.4 Training Intention and Training Retention

Generally, it is speculated in this paper that the relationship between memory and intention is interchangeable towards transfer behaviour. This speculation is supported by several authors in several fields such as clinical studies (Khoyratty et al., 2015), tourism (Ali et al., 2016; Martin, 2010), and, generally, in psychology (Achtziger et al., 2012; Brandimonte et al., 2014; Goschke & Kuhl, 1996, p. 54), which shows that the relation of memory and intention is a cause for great concern. It should be noted that Loureiro (2014) empirically investigated the relation between memory and intention and found it significant.

Failure of memory (information recall) leads to intention hampering (Brandimonte et al., 2014). For instance, a person cannot intend to act unless they can remember the information that relates to that action (Goschke & Kuhl, 1996, p. 54). This case named as 'delayed intention' (Brandimonte et al., 2014. p. 25). Therefore, Ali et al. (2016) found, in the tourism domain, that memories have a significant relation with intention. This kind of memory, which forms a future intention, is called prospective memory (McFarland & Glisky, 2012). Going into detail, 'memory for intention' is a widely concerning issue (term) in psychology (Achtziger et al., 2012; Brandimonte et al., 2014; Chasteen et al., 2001; Cohen et al., 2001; Loftus, 1971). Achtziger et al. (2012) reported that few investigations are implemented to describe the effect of memory on intention in terms of forming and applying intention. According to the recent literature review, few or even no studies (starting from 2016) in the training transfer literature concern the 'intention' and memory–training retention' relation.

Finally, the previous literature confirms the view of this paper's authors that memory and intention have an interchangeable relationship. Additionally, this kind of investigation would increase the understanding of these variables in the training transfer domain.

3.5 Proposed Study Framework

Using findings from the existing training transfer literature, the authors propose a unique conceptual model, as illustrated in Figure 4. This conceptual model is a hybridisation of Baldwin and Ford's transfer model (1988) and Ajzen's TPB (1991).
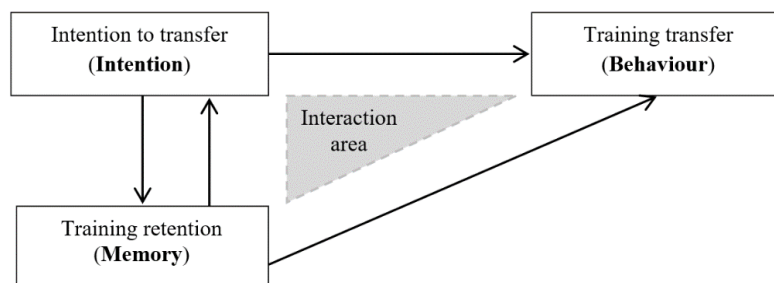

Figure 3. Proposed hybridised conceptual model

4. Methodology

The researchers use the 'quantitative method' approach in this study. The quantitative method is selected when a mature theory exists, and it is particularly focused on behaviour (Bryman & Bell, 2011). The authors apply five hypotheses related to three variables: (i) intention to transfer, (ii) training retention, (iii) training transfer (obtained from training transfer model and TPB).

4.1 Study Population

The study population (n=52,000 – http://www.fahr.gov.ae) was made up of employees from the United Arab Emirates (UAE) governmental ministries (eight different ministries: interior, education, health, foreign affairs, community, finance, energy, and state for federal national council affairs). This population of employees had attempted >1 training program within a 1-year period (Choi & Park, 2014 stated this criterion). Several job types were included (managers, executives, and technicians) (Table 2). The representative sample included 425 participants, of whom 377 participants is the minimum sample size (Krejcie & Morgan, 1970).

4.2 Study Hypotheses

The hypotheses are designed to answer the study question (Is intention or memory first?). In general, hypotheses should describe the interaction area of the study variables. For this, the authors include a mediating hypothesis, which relates to the interchangeable relation of 'intention' and 'memory'.

The study hypotheses are as follows:

4.2.1 General Hypotheses

> *H1: Intention to transfer has a positive influence on training transfer.*

> *H2: Training retention has a positive influence on training transfer.*

4.2.2 Mediating Hypotheses

> *H3: Intention to transfer influences training transfer, mediated by training retention.*

> *H4: Training retention influences training transfer, mediated by intention to transfer.*

4.2.3 Conclusion Hypotheses

Finally, in an attempt to disentangle the confusion regarding how intention and retention affect transfer behaviour (whoat comes first?), a final hypothesis is proposed:

> *H5: There is an interchangeable relationship between intention to transfer and training retention towards transfer behaviour.*

Ultimately, these hypotheses revolve around one topic, which is 'describing the state of the interaction of the study variables (intention and memory) versus transfer of training (behaviour)'; Figure 3 describes these relations.
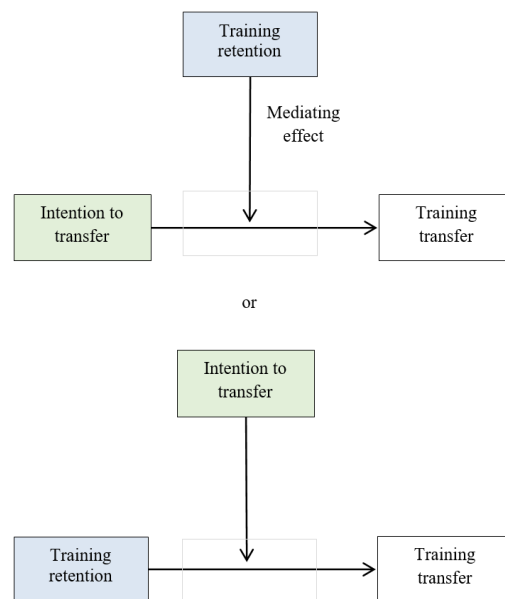
5. Study Questionnaire

Figure 4. Mediating effects options

This diagram summarizes the mediating hypotheses situation.

The questionnaire includes two aspects: demographic information and study items. The authors applied a five-point Likert scale with five levels (strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5) (Jamieson, 2004; Norman, 2010). They obtained the study variables from training transfer psychology literature (Ajzen, 1991; Tesluk et al., 1995; Xiao, 1996). Supportive studies were recalled to adapt the study items (see, for example Bhatti et al., 2013; Blume et al., 2010; Velada et al., 2007).

Particularly, the researchers acquired the intention items from Ajzen (2005) ('I intend to . . .', 'I plan to . . .', and 'I will try to . . .'). Additionally, and to increase the reliability, the authors added two items to the former three items by replicating the mentioned items. Finally, they mainly obtained the training retention items from Velada et al. (2007) (using the phrase 'I still remember . . .'). All items' details are clearly presented in Table 1.

5.1 Amendment and Refining of Study Items

Study items must be amended and refined before generalising them to the whole population. Back translation method is used to achieve a precise translation from English to Arabic (Banville et al., 2000; Brislin, 1970). Then the researchers conducted qualitative testing via a 'pretest' evaluation to enhance the study items (Sekaran & Bougie, 2013). Following the pretest, the researchers conducted a pilot test (quantitative testing) to ensure items' reliability (Piaw, 2012).

Table 1. Study Operational Definition and Items

Study Variable	Variable Definition	Definition Sources	Study Items	Study Items Sources
Intention to Transfer	Trainee willingness to plan and to try to exert an effort to apply learnt material in the workplace.	Ajzen, 1991; Cheng and Hampson, 2015	5	Ajzen, 2005
Training Retention	The degree to which the trainee retains (memorises) the content after training is completed.	Deffenbacher et al., 2008; Ong & Tasir, 2015; Sakul-Thanasakdi, 2001; Velada et al., 2007	4	Velada et al., 2007
Training Transfer	Transfer and application of knowledge, skills, and attitude as workplace behaviour.	Al-Eisa et al., 2009; Burke and Saks, 2009; Ford and Weissbein, 1997; Kraiger, 2002	6	Tesluk et al., 1995; Xiao, 1996

Note. Ajzen (1991) was the main source for the 'intention' items. Ajzen founded the most remarkable psychological theories (Cheng & Hampson, 2008).

5.2 Data Collection and Statistical Analysis

A descriptive introduction was prefaced by the study questionnaires. The questionnaires were directed to the study population by formal email. Note that the data collection involved a cross-sectional approach. A total of 528 respondents was achieved. Finally, 425 responses were suitable to be applied in the statistical analysis. The authors analysed study data via SmartPls software 3.0 (Hair et al., 2016).

6. Results

The researchers expressed the study results by two types of descriptions: descriptive and inferential statistics.

6.1 Descriptive Statistics

The descriptive statistics (Table 2) reflect an appropriate sample with its diversity. The descriptive statistics are also shown in Table 3 (mean and SD).

Table 2. Demographic Information and Respondent Profile (n=425)

Demographic	Details %
Bachelor's	61
Master's	13
Diploma	12
Secondary	11
Ph.D.	3
Less than secondary	1
Managerial job	41
Technician	34
Managerial job and technician	14
Managerial and field job	8
Field job	3
Male	36
Female	64

6.2 Correlations, Reliabilities, and Hypothesis Testing

Considerable reliability (Cronbach's alpha > 0.70) and discriminant validity is achieved (Table 3). Standards were obtained based on Hair et al. (2016).

Table 3. Latent Variable Correlations

Variable	Mean	SD	Training Retention	Intention to Transfer	Training Transfer
Training Retention	3.687	0.95	(0.947)		
Intention to Transfer	4.0896	0.87	0.639 *	(0.923)	
Training Transfer	3.5965	1.02	0.330 *	0.409 *	(0.922)

Note: *p*-values < 0.05; α values shown in parentheses. These results were set when the intention to transfer was considered as a mediator. It should be noted that $R^2 = 0.449$.

Model fit reflects the case in which the study conceptual model fits the empirical data (Hair et al., 2016). In the current study, the authors conducted two types of model fit: the standardised root mean residual (SRMR) method (Hair et al., 2016) and normed fit index (NFI) method (Afthanorhan, 2013; Bentler & Bonett, 1980; https://www.smartpls.com). As a result, a good fit SRMR=0.055 and NFI=0.912 (baseline SRMR =< 0.08, NFI > 0.90) was established.

Table 4. Hypothesis Acceptance Status and Mediating Analysis

No.	Hypothesis Statements	Path Coefficients/ Specific Indirect Effects (for Med. & Mod. Effect)	*t*-Values	*p*-Values	Confidence Intervals Bias Corrected 2.50 %	97.50 %	Acceptance Status
General Hypotheses							
H1	Intention to Transfer -> Training Transfer	0.409*	5.987	0.000	0.294	0.518	Accepted
H2	Training Retention (Memory) -> Training Transfer	0.33*	4.862	0.000	0.22	0.444	Accepted
Mediating Analysis							
H3-Med. IT	Training Retention (Memory) -> Intention to Transfer -> Training Transfer	0.262*	6.139	0.000	0.179	0.352	Accepted
H4-Med. TR	Intention to Transfer -> Training Retention (Memory) -> Training Transfer	0.211*	4.593	0.000	0.123	0.305	Accepted
Conclusion Hypotheses							
H5	There is an interchangeable relationship between intention to transfer and training retention towards transfer behaviour.						Accepted

Note: *p*-values < 0.05. Med: Mediating. IT: Intention to Transfer. TR: Training Retention.

7. Discussion

The study discussion is concentrated mainly on the variables' relation results. The study hypotheses are the centre of the discussion.

7.1 Intention to Transfer and Training Transfer

Intention to transfer has a significant and positive influence on training transfer. This result confirms the TPB concept (Ajzen, 1991). In the training transfer domain, many authors' results are consistent with the current study's result (Cheng et al., 2015; Friedman & Ronen, 2015).

7.2 Training Retention and Training Transfer

Training retention (memory) is positively and directly related to training transfer, particularly in the domain of training transfer (Baldwin & Ford, 1988; Bhatti et al., 2013). However, other fields demonstrate the same results (see for example, Achtziger et al., 2012; Ali et al., 2016; Brandimonte et al., 2014, Goschke & Kuhl, 1996, p. 54; Khoyratty et al., 2015; Martin, 2010).

7.3 Mediating Status

As mentioned in major references (mainly on TBP [Ajzen, 1991] and transfer model [Baldwin & Ford, 1998]), both intention and memory have a central (mediating) role in the behavioural context. An advanced illustration is shown in Table 5 for the purpose of answering the study question 'Is intention or memory first?'.

Table 5. A Holistic Analysis for Answering the Study Question 'Is Intention or Memory First?'

Criteria	Training Retention (Memory)	Intention to Transfer	Comments
The **significance** of the relation (towards behaviour 'training transfer')	Sig.	Sig.	Intention **has a higher strength** on behaviour 'training transfer' than memory.
The **strength** of the variable (path-coefficients towards behaviour 'training transfer')	0.33	0.409	
The **significance** of the relation (mediating)	Sig.	Sig.	Intention has a **slightly higher** strength than memory.
Mediating specific effect (**strength**)	0.211	0.262	
Importance-performance matrix analysis (practical effect – analysis)	0.329	0.411	Intention **has a higher practical effect** on behaviour 'training transfer' than memory.

To sum up, the major result of this study is that intention and memory have a highly overlapping interaction against behaviour. However, intention comes in a relatively more advanced rank than memory. The mediating strength of intention is higher than memory (intention = 0.262, memory = 0.211). In addition, intention has a higher strength than memory (intention = 0.409, memory = 0.330) against behaviour. Further illustrations are presented in Table 5. That said, intention and memory have a mutually significant high path-coefficient (0.639). This also reveals that both variables affect each other regardless of their relation with transfer behaviour. From another perspective, Figure 5 summarises the situation of intention and memory towards behaviour.
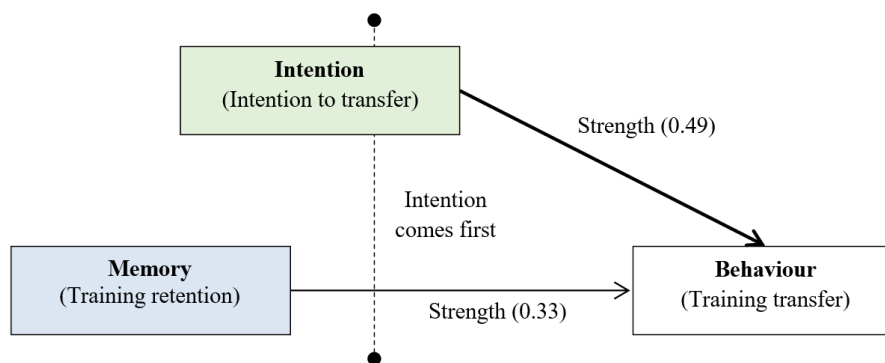

Figure 5. What comes first?

This figure represents a summary of answering the research question 'What comes first?'.

Ultimately, intention comes first, with a prominent presence of memory. Thick arrows symbolise the relation strength 'path-coefficient'.

8. Managerial Implications

In general, anyone who deals with any kind of behaviour (management, training – educational, leadership, tourism, trade, customer services, behaviour, etc.) has to understand the intention and memory in combination (how do both work together?). It is crucial to consider this in the planning phase of any behavioural design. This would enhance the professionalism of behaviour control. Training design would be the crucial practical feature of intention and memory. Training design has a dominant role in training transfer (Alshaali et al., 2018; Gyimah, 2015; Nikandrou et al., 2009). Therefore, training program designers should consider intention and memory in the design phase.

The study has a theoretical tendency, which makes recommending a managerial implication problematic. It is easy in tourism or in customer service to apply an attractive action to affect memory and intentions. However, the complexity of training transfer makes it difficult to implement a specific approach to affect specifically the memory and intentions in parallel. In training transfer a managerial implication could be achieved accurately via a proven method related to memory and intention separately. Intention could be enhanced by affecting three inputs (attitudes towards behaviour, subjective norms, and perceived behavioural control) (Ajzen, 1991). To simplify this, three strategies would enhance training intentions: (i) providing information to trainees prior to the training program, (ii) trainees having some accountability for learning with their supervisor, and (iii) trainees perceiving a training program as mandatory (Baldwin & Magjuka, 1991). Training memory could be achieved by planning and applying two techniques: (i) 'spacing effect – retention interval', which consists of repetition of the information learned during specific periods of time (Ebbinghaus, 1964), and (ii) 'over learning', which represents the repetition of applying the acquired information; the greater the repetition, the more stable the information (Nijman et al., 2006, Ritter et al., 2011). Practically, these proven techniques would avoid information decay (Ebbinghaus, 1964) to a remarkable degree. Therefore, this could save a tremendous amount of money related to training transfer (Georgenson, 1982).

9. Study Limitations and Suggested Research

The results of the current study cannot be fully generalised to other fields because of its specific scope (training transfer in public sector). Other researchers could examine the study hypotheses in other domains, such as 'customer behaviour'. In this study we used people's impressions (subjective survey) to evaluate the results; thus we recommend using an objective (numerical) approach. For instance, digital databases (customer services) for a specific field could be applied. The current study could be described in terms of its theoretical tendency. Therefore, providing a managerial implication is challenging. However, it opens the door for other interested researchers to specify a clear and smart solution for this case.

10. Conclusions

This study demonstrates the importance of understanding the interaction between trainee intention and trainee memory against transfer behaviour. In addition, the proposed hybrid model (TPB × transfer model) aims to clarify a holistic perspective on the missing constructs (intention and memory) from both TPB and transfer model.

To address the current lack of empirical investigation into the combination of intention and memory, in this study we investigated a number of dimensions and relationships between intention and memory. Several kinds of relationships have been suggested, raising the question of 'What comes first: intention or memory?' and 'What is the nature of these relationships?', particularly under the mediating perspectives. However, mediating perspectives are not well understood for this situation. Accordingly, this study demonstrated that there is an interchangeable (overlapping) relationship between intention and memory against behaviour. Nevertheless, intention comes first, with a prominent presence of memory. Future researchers could apply this concept in several domains to emphasise the study arguments. In practice, training practitioners should consider trainees' intentions and memory in both designing and applying training programs. Yet, the design phase is the dominant factor to be considered. This would enhance the professionalism of behaviour control and effectiveness.

References

Achtziger, A., Bayer, U. C., & Gollwitzer, P. M. (2012). Committing to implementation intentions: Attention and memory effects for selected situational cues. *Motivation and Emotion, 36*(3), 287-300. https://doi.org/10.1007/s11031-011-9261-6

Afthanorhan, W. M. A. B. W. (2013). A comparison of partial least square structural equation modeling (PLS-SEM) and covariance based structural equation modeling (CB-SEM) for confirmatory factor analysis. *International Journal of Engineering Science and Innovative Technology, 2*(5), 198-205.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Prentice Hall.

Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracin, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Erlbaum.

Al-Eisa, A. S., Furayyan, M. A., & Alhemoud, A. M. (2009). An empirical examination of the effects of self-efficacy, supervisor support and motivation to learn on transfer intention. *Management Decision, 47*(8), 1221-1244. https://doi.org/10.1108/00251740910984514

Ali, F., Ryu, K., & Hussain, K. (2016). Influence of experiences on memories, satisfaction and behavioral intentions: A study of creative tourism. *Journal of Travel & Tourism Marketing, 33*(1), 85-100. https://doi.org/10.1080/10548408.2015.1038418

Alshaali, S., Abhamid, K., & Al-Ansi, A. (2018). Training transfer: Does training design preserve training memory? *Asian Social Science, 14*(10), 46-58. https://doi.org/10.5539/ass.v14n10p46

American Society for Training and Development (ASTD). (2006). *The 2006 ASTD state of the industry report*. ASTD Press.

Arthur, W., Jr., & Day, E. A. (2020). Skill decay: The science and practice of mitigating skill loss and enhancing retention. In P. Ward, J. M. Schraagen, J. Gore, & E. Roth (Eds.), *The Oxford handbook of expertise* (pp. 1085-1108). Oxford University Press.

Arthur, W., Jr., Bennett, W., Jr., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology, 88*(2), 234-245. https://doi.org/10.1037/0021-9010.88.2.234

Austin, K. A. (2009). Multimedia learning: Cognitive individual differences and display design techniques predict transfer learning with multimedia learning modules. *Computers & Education, 53*(4), 1339-1354. https://doi.org/10.1016/j.compedu.2009.06.017

Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology, 41*(1), 63-105. https://doi.org/10.1111/j.1744-6570.1988.tb00632.x

Baldwin, T. T., & Magjuka, R. J. (1991). Organizational training and signals of importance: Linking pretraining perceptions to intentions to transfer. *Human Resource Development Quarterly, 2*(1), 25-36. https://doi.org/10.1002/hrdq.3920020106

Banville, D., Desrosiers, P., & Genet-Volet, Y. (2000). Translating questionnaires and inventories using a cross-cultural translation technique. *Journal of Teaching in Physical Education, 19*(3), 374-387. https://doi.org/10.1123/jtpe.19.3.374

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588-606. https://doi.org/10.1037/0033-2909.88.3.588

Bhatti, M. A., & Kaur, S. (2010). The role of individual and training design factors on training transfer. *Journal of European Industrial Training, 34*(7), 656-672. https://doi.org/10.1108/03090591011070770

Bhatti, M. A., Kaur, S., & Battour, M. M. (2013). Training transfer and transfer motivation in the Malaysian banking sector. *Global Business and Organizational Excellence, 33*(1), 40-57. https://doi.org/10.1002/joe.21522

Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review, 13*(3), 442-453. https://doi.org/10.5465/amr.1988.4306970

Blanchard, K. (2013). Make your training stick. *People Dynamics, 13*(9), 13.

Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of training: A meta-analytic review. *Journal of Management, 36*(4), 1065-1105. https://doi.org/10.1177/0149206309352880

Blume, B. D., Ford, J. K., Surface, E. A., & Olenick, J. (2019). A dynamic model of training transfer. *Human Resource Management Review, 29*(2), 270-283. https://doi.org/10.1016/j.hrmr.2017.11.004

Brandimonte, M. A., Einstein, G. O., & McDaniel, M. A. (2014). *Prospective memory: Theory and applications*. Psychology Press. https://doi.org/10.4324/9781315806488

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216. https://doi.org/10.1177/135910457000100301

Bryman, A., & Bell, E. (2011). *Business research methods* (3rd ed.). Oxford.

Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review, 6*(3), 263-296. https://doi.org/10.1177/1534484307303035

Chasteen, A. L., Park, D. C., & Schwarz, N. (2001). Implementation intentions and facilitation of prospective memory. *Psychological Science, 12*(6), 457-461. https://doi.org/10.1111/1467-9280.00385

Chen, T., Liu, L. L., Cui, J. F., Li, Y., Qin, X. J., Tao, S. L., Neumann, D. L., Shum, D. H., Cheung, E. F., Wang, Y., & Chan, R. C. (2019). Implementation intention training for prospective memory in schizophrenia: A 3-month follow-up study. *Schizophrenia Research, 206*, 378-385. https://doi.org/10.1016/j.schres.2018.10.015

Cheng, E. W., & Hampson, I. (2008). Transfer of training: A review and new insights. *International Journal of Management Reviews, 10*(4), 327-341. https://doi.org/10.1111/j.1468 2370.2007.00230.x

Cheng, E. W. L., & Ho, D. C. K. (1998). The effects of some attitudinal and organizational factors on transfer outcome. *Journal of Managerial Psychology, 13*(5/6), 309-317. https://doi.org/10.1108/02683949810219873

Cheng, E. W. L., Sanders, K., & Hampson, I. (2015). An intention-based model of transfer of training. *Management Research Review, 38*(8), 908-928. https://doi.org/10.1108/MRR-05-2014-0107

Choi, H. J., & Park, J. H. (2014). The relationship between learning transfer climates and innovation in public and private organizations in Korea. *International Journal of Manpower, 35*(7), 956-972. https://doi.org/10.1108/IJM-07-2012-0101

CIPD (The Chartered Institute of Personnel and Development). (2015). *The CIPD annual survey report 2015*. CIPD.

Cohen, A. L., West, R., & Craik, F. I. (2001). Modulation of the prospective and retrospective components of memory for intentions in younger and older adults. *Aging, Neuropsychology, and Cognition, 8*(1), 1-13. https://doi.org/10.1076/anec.8.1.1.845

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.

Davis, L. E., Ajzen, I., Saunders, J., & Williams, T. (2002). The decision of African American students to complete high school: An application of the theory of planned behavior. *Journal of Educational Psychology, 94*(4), 810-819. https://doi.org/10.1037/0022-0663.94.4.810

Deffenbacher, K. A., Bornstein, B. H., McGorty, E. K., & Penrod, S. D. (2008). Forgetting the once-seen face: Estimating the strength of an eyewitness's memory representation. *Journal of Experimental Psychology: Applied, 14*(2), 139-150. https://doi.org/10.1037/1076-898X.14.2.139

Dirani, K. M. (2011). Professional training as a strategy for staff development: A study in training transfer in the Lebanese context. *European Journal of Training and Development, 36*(2/3), 158-178. https://doi.org/10.1108/03090591211204698

Donahoe, J. W., & Palmer, D. C. (1994). *Learning and complex behavior*. Allyn & Bacon.

Ebbinghaus, H. (1964). *Memory: A contribution to experimental psychology*. Dove.

Ford, L. (2009). Improving training transfer. *Industrial and Commercial Training, 41*(2), 92-96. https://doi.org/10.1108/00197850910939135

Foxon, M. J. (1994). A process approach to the transfer of training. Part 1: The impact of motivation and supervisor support on transfer maintenance. *Australian Journal of Educational Technology, 10*(1), 130-143. https://doi.org/10.14742/ajet.2080

Friedman, S., & Ronen, S. (2015). The effect of implementation intentions on transfer of training. *European Journal of Social Psychology, 45*(4), 409-416. https://doi.org/10.1002/ejsp.2114

Gegenfurtner, A., Veermans, K., & Vauras, M. (2013). Effects of computer support, collaboration, and time lag on performance self-efficacy and transfer of training: A longitudinal meta-analysis. *Educational Research Review, 8*, 75-89. https://doi.org/10.1016/j.edurev.2012.04.001

Georgenson, D. L. (1982). The problem of transfer calls for partnership. *Training & Development Journal, 36*(10), 75-78.

Gollwitzer, P. M., & Oettingen, G. (2012). Goal pursuit. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 208-231). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195399820.013.0013

Gollwitzer, P. M., Bayer, U. C., & McCulloch, K. C. (2005). The control of the unwanted. In P. M. Gollwitzer, U. Bayer, & K. McCulloch (Eds.), *The new unconscious* (pp. 485-515). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195307696.003.0018

Goschke, T., & Kuhl, J. (1996). Remembering what to do: Explicit and implicit memory for intentions. *Prospective Memory: Theory and Applications*, 53-91.

Govaerts, N., Kyndt, E., & Dochy, F. (2018). The influence of specific supervisor support types on transfer of training: Examining the mediating effect of training retention. *Vocations and Learning, 11*(2), 265-288. https://doi.org/10.1007/s12186-017-9190-y

Griffin, R. (2010). Means and ends: Effective training evaluation. *Industrial and Commercial Training, 42*(4), 220-225. https://doi.org/10.1108/00197851011048582

Grohmann, A., Beller, J., & Kauffeld, S. (2014). Exploring the critical role of motivation to transfer in the training transfer process. *International Journal of Training and Development, 18*(2), 84-103. https://doi.org/10.1111/ijtd.12030

Grossman, R., & Salas, E. (2011). The transfer of training: What really matters. *International Journal of Training and Development, 15*(2), 103-120. https://doi.org/10.1111/j.1468 2419.2011.00373.x

Gyimah, E. (2015). The effect of organizational climate on transfer of training. *European Journal of Business and Management, 7*(19), 137-146.

Hair, Jr., J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage, Thousand Oaks, CA.

Holton III, E. F. (2005). Holton's evaluation model: New evidence and construct elaborations. *Advances in Developing Human Resources, 7*(1), 37-54. https://doi.org/10.1177/1523422304272080

Holton III, E. F., Bates, R. A., & Ruona, W. E. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly, 11(*4), 333-360. https://doi.org/10.1002/1532-1096(200024)11:4<333::AID-HRDQ2>3.0.CO;2-P

Holton, E. F. (1996). The flawed four-level evaluation model. *Human Resource Development Quarterly, 7*(1), 5-21. https://doi.org/10.1002/hrdq.3920070103

Industry Report 2000. (2000). *Training, 37*(10), 45-48.

Jaidev, U. P. (2018). Transfer climate and transfer of training: The mediating role of transfer intention in hospitality organisations. *International Journal of Services and Operations Management, 31*(1), 19-39. https://doi.org/10.1504/IJSOM.2018.10015169

Jamieson, S. (2004). Likert scales: How to (ab)use them. *Medical Education, 38*(12), 1217-1218. https://doi.org/10.1111/j.1365-2929.2004.02012.x

Kauffeld, S., & Lehmann-Willenbrock, N. (2010). Sales training: Effects of spaced practice on training transfer. *Journal of European Industrial Training, 34*(1), 23-37. https://doi.org/10.1108/03090591011010299

Kavanagh, M. J. (1998). Transfer of training: A multi-stage model designed for practical use by organizations. In C. Scholz & J. Zentes (Eds.), *Strategisches Euro-management* (pp. 301-321). Schaffer-Poeschel.

Kerlinger, F. N. (1979). *Behavioral research: A conceptual approach*. Holt, Rinehart & Winston.

Khoyratty, N. B., Wang, Y., O'Gorman, J. G., Lloyd, C., Williams, P. L., Chan, R. C., & Shum, D. H. (2015). Forming implementation intentions improves prospective memory in early psychosis. *Psychiatry Research, 228*(3), 265-271. https://doi.org/10.1016/j.psychres.2015.05.101

Kim, Y., Ribeiro, M. A., & Li, G. (2022). Tourism memory, mood repair and behavioral intention. *Annals of Tourism Research, 93*, 103369. https://doi.org/10.1016/j.annals.2022.103369

Kirkpatrick, D. L. (1959). Techniques for evaluating training programs. *Journal of the American Society of Training Directors, 13*(3), 21-26.

Kraiger, K. (2002). Decision-based evaluation. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art lessons for practice* (pp. 331-375). Jossey-Bass.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610. https://doi.org/10.1177/001316447003000308

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5-6), 411-432. https://doi.org/10.1016/S0883-9026(98)00033-0

Loftus, E. F. (1971). Memory for intentions: The effect of presence of a cue and interpolated activity. *Psychonomic Science, 23*(4), 315-316. https://doi.org/10.3758/BF03336128

Loureiro, S. M. C. (2014). The role of the rural tourism experience economy in place attachment and behavioral intentions. *International Journal of Hospitality Management, 40*, 1-9. https://doi.org/10.1016/j.ijhm.2014.02.010

Marsh, R. L., Hicks, J. L., & Bink, M. L. (1998). Activation of completed, uncompleted, and partially completed intentions. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 24*(2), 350-361. https://doi.org/10.1037/0278-7393.24.2.350

Martin, D. (2010). Uncovering unconscious memories and myths for understanding international tourism behavior. *Journal of Business Research, 63*(4), 372-383. https://doi.org/10.1016/j.jbusres.2009.04.020

May, G. L., & Kahnweiler, W. M. (2000). The effect of a mastery practice design on learning and transfer in behavior modeling training. *Personnel Psychology, 53*(2), 353-373. https://doi.org/10.1111/j.1744-6570.2000.tb00205.x

McFarland, C., & Glisky, E. (2012). Implementation intentions and imagery: Individual and combined effects on prospective memory among young adults. *Memory & Cognition, 40*(1), 62-69. https://doi.org/10.3758/s13421-011-0126-8

Meeks, J. T., Pitães, M., & Brewer, G. A. (2015). The compensatory role of implementation intentions for young adults with low working memory capacity. *Applied Cognitive Psychology, 29*(5), 691-701. https://doi.org/10.1002/acp.3151

Miller, G. A., Galanter, E., & Pribram, K. H. (1960). *Plans and the structure of behavior*. Holt, Rinehart & Winston. https://doi.org/10.1037/10039-000

Nijman, D. J. J., Nijhof, W. J., Wognum, A. A. M., & Veldkamp, B. P. (2006). Exploring differential effects of supervisor support on transfer of training. *Journal of European Industrial Training, 30*(7), 529-549. https://doi.org/10.1108/03090590610704394

Nikandrou, I., Brinia, V., & Bereri, E. (2009). Trainee perceptions of training transfer: An empirical analysis. *Journal of European Industrial Training, 33*(3), 255-270. https://doi.org/10.1108/03090590910950604

Norman, G. (2010). Likert scales, levels of measurement and the 'laws' of statistics. *Advances in Health Sciences Education, 15*(5), 625-632. https://doi.org/10.1007/s10459-010-9222-y

Ong, C. P., & Tasir, Z. (2015). Self-instructional module based on cognitive load theory: A study on information retention among trainee teachers. *Educational Technology Research and Development, 63*(4), 499-515. https://doi.org/10.1007/s11423-015-9383-8

Owen, A. M., Hampshire, A., Grahn, J. A., Stenton, R., Dajani, S., Burns, A. S., Howard, R. J., & Ballard, C. G. (2010). Putting brain training to the test. *Nature, 465*(7299), 775-778. https://doi.org/10.1038/nature09042

Palmer, D. C. (1991). A behavioral interpretation of memory. In L. J. Hayes & P. N. Chase (Eds.), *Dialogues on verbal behavior* (pp. 261-279). Context Press.

Piaw, C. Y. (2012). *Mastering research methods*. McGraw-Hill.

Pierce, W. D., & Cheney, C. D. (2013). *Behavior analysis and learning*. Psychology Press.

Posthuma, R. A., & Dworkin, J. B. (2000). A behavioral theory of arbitrator acceptability. *International Journal of Conflict Management, 11*(3), 249-266. https://doi.org/10.1108/eb022842

Rangel, B., Chung, W., Harris, T. B., Carpenter, N. C., Chiaburu, D. S., & Moore, J. L. (2015). Rules of engagement: The joint influence of trainer expressiveness and trainee experiential learning style on engagement and training transfer. *International Journal of Training and Development, 19*(1), 18-31. https://doi.org/10.1111/ijtd.12045

Reynolds, A. (1993). *The trainer's dictionary: Hard terms, abbreviations, and acronyms*. HRD Press.

Ritter, F. E., Baxter, G. D., Kim, J. W., & Srinivasmurthy, S. (2011). Learning and retention. In D. J. Lee & A. Kirlik (Eds.), *The Oxford handbook of cognitive engineering* (pp. 125-142). Oxford University Press.

Sakul-Thanasakdi, K. (2001). *Applying cognitive load theory to second language acquisition* (Unpublished Ph.D. dissertation). The University of New South Wales, Australia.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach* (6th ed.). West Sussex, England: John Wiley & Sons.

Seyda, S., & Werner, D. (2012). IW-Weiterbildungserhebung 2011: Gestiegenes weiterbildungsvolumen bei konstanten kosten. *IW-Trends-Vierteljahresschrift zur Empirischen Wirtschaftsforschung, 39*(1), 37-54. https://doi.org/10.2373/1864-810X.12-01-03

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386. https://doi.org/10.1002/jclp.20237

Simosi, M. (2012). The moderating role of self-efficacy in the organizational culture–training transfer relationship. *International Journal of Training and Development, 16*(2), 92-106. https://doi.org/10.1111/j.1468-2419.2011.00396.x

Tesluk, P. E., Farr, J. L., Mathieu, J. E., & Vance, R. J. (1995). Generalization of employee involvement training to the job setting: Individual and situational effects. *Personnel Psychology, 48*(3), 607-632. https://doi.org/10.1111/j.1744-6570.1995.tb01773.x

Tracey, J. B., Tannenbaum, S. I., & Kavanagh, M. J. (1995). Applying trained skills on the job: The importance of the work environment. *Journal of Applied Psychology, 80*(2), 239-252. https://doi.org/10.1037/0021-9010.80.2.239

Unsworth, N., & Engle, R. W. (2007). The nature of individual differences in working memory capacity: Active maintenance in primary memory and controlled search from secondary memory. *Psychological Review, 114*(1), 104-132. https://doi.org/10.1037/0033-295X.114.1.104

Velada, R., Caetano, A., Michel, J. W., Lyons, B. D., & Kavanagh, M. J. (2007). The effects of training design, individual characteristics and work environment on transfer of training. *International Journal of Training and Development, 11*(4), 282-294. https://doi.org/10.1111/j.1468-2419.2007.00286.x

Vlasblom, J. I., Pennings, H. J., van der Pal, J., & Oprins, E. A. (2020). Competence retention in safety-critical professions: A systematic literature review. *Educational Research Review, 30*, 100330. https://doi.org/10.1016/j.edurev.2020.100330

Wexley, K. N., & Latham, G. P. (2002). *Developing and training human resources in organizations*. Prentice Hall.

Wiethoff, C. (2004). Motivation to learn and diversity training: Application of the theory of planned behavior. *Human Resource Development Quarterly, 15*(3), 263-278. https://doi.org/10.1002/hrdq.1103

Xiao, J. (1996). The relationship between organizational factors and the transfer of training in the electronics industry in Shenzhen, China. *Human Resource Development Quarterly, 7*(1), 55-73. https://doi.org/10.1002/hrdq.3920070107

Zhang, X., Chen, Z., & Jin, H. (2021). The effect of tourists' autobiographical memory on revisit intention: Does nostalgia promote revisiting? *Asia Pacific Journal of Tourism Research, 26*(2), 147-166. https://doi.org/10.1080/10941665.2020.1718171

Reviewer Acknowledgements

International Journal of Psychological Studies wishes to acknowledge the following individuals for their assistance with peer review of manuscripts for this issue. Their help and contributions in maintaining the quality of the journal are greatly appreciated.

International Journal of Psychological Studies is recruiting reviewers for the journal. If you are interested in becoming a reviewer, we welcome you to join us. Please contact us for the application form at: ijps@ccsenet.org

Reviewers for Volume 14, Number 2

Camilla Matera, University of Florence, Italy

Douglas Kei Shing Ng, The University of Hong Kong, Hong Kong

Duston Morris, University of Central Arkansas, United States

Gary Popoli, Stevenson University, United States

Jose Antonio Canaviri-Zamora, UNICEF, Argentina

José García-Arroyo, National Distance Education University, Spain

Julia Penn Shaw, SUNY - Empire State College, United States

Julie Campbell, Illinois State University, United States

Kofi E Boakye, Anglia Ruskin University, United Kingdom

Marco Aurelio Prado, Federal University of Minas Gerais, Brazil

Maria Clara Kreis, Catholic Theological Union, United States

Maria del Camino Escolar Llamazares, University of Burgos, Spain

Mei-Hsiang Tsai, Chinese Culture University, Taiwan

Miranda J. Walker, Ministry of Education, Cyprus

Nadia Ayub, Institute of Business Management, Pakistan

Nguedong Jean Anatole, Université de Dschang, Cameroon

Petra Pelletier, University of Paris, France

Wan Salwina Wan Ismail, National University of Malaysia, Malaysia

Call for Manuscripts

Published by the Canadian Center of Science and Education, *International Journal of Psychological Studies (IJPS)* is an international, double-blind peer-reviewed, open-access journal with both print and online versions. IJPS encourages high-quality submissions. In order to carry out our non-discrimination principles, we use a double-blind system of peer review. IJPS covers the entire spectrum of research including the following topics: general psychology, cognitive psychology, neuropsychology, developmental psychology, educational psychology, as well as social psychology. The journal is published in both printed and online versions.

We are seeking submissions for forthcoming issues. All manuscripts should be written in English. Manuscripts from 3000–8000 words in length are preferred. All manuscripts should be prepared in MS-Word format, and submitted online, or sent to: ijps@ccsenet.org

Paper Selection and Publishing Process

a) Upon receipt of a submission, the editor sends an e-mail of confirmation to the submission's author within one to three working days. If you fail to receive this confirmation, your submission e-mail may have been missed.

b) Peer review. We use a double-blind system for peer review; both reviewers' and authors' identities remain anonymous. The paper will be reviewed by at least two experts: one editorial staff member and at least one external reviewer. The review process may take four to ten weeks.

c) Notification of the result of review by e-mail.

d) If the submission is accepted, the authors revise paper and pay the Article Processing Charge.

e) A PDF version of the journal is available for download on the journal's website, free of charge.

Requirements and Copyrights

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the authorities responsible where the work was carried out, and that, if accepted, the article will not be published elsewhere in the same form, in English or in any other language, without the written consent of the publisher. The editors reserve the right to edit or otherwise alter all contributions, but authors will receive proofs for approval before publication.

Copyrights for articles are retained by the authors, with first publication rights granted to the journal. The journal/publisher is not responsible for subsequent uses of the work. It is the author's responsibility to bring an infringement action if so desired by the author.

More Information

E-mail: ijps@ccsenet.org

Website: http://ijps.ccsenet.org

The journal is peer-reviewed
The journal is open-access to the full text
The journal is included in:

ERA
GETIT@YALE(Yale University Library)
Harvard Library E-Journals
LOCKSS
Open J-Gate
PKP Open Archives Harvester

SHERPA/RoMEO
Standard Periodical Directory
UCR Library
Ulrich
Universal Digital Library

International Journal of Psychological Studies
Quarterly