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## Sustained flow and personal best in higher education: A mixed-methods approach<sup>☆</sup>

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### ABSTRACT

The focus of the present study is on two newly-born concepts in educational psychology, i.e., personal best goals (PB) and sustained flow (SF). In other words, the present study delved into English as a foreign language (EFL) students' PB and SF by finding the most crucial sustained flows, and exploring the dynamic interplay between PB and SF in two quantitative and qualitative phases. To do so, the Persian web-based versions of the Personal Best Questionnaire (Martin, 2006) and the DMC Disposition Scale (Muir, 2016) were utilized to explore the nexus between students' PB and SF. This is accomplished by Structural Equation Modeling (SEM) in the quantitative phase and analyzing students' responses on open-ended items of the DMC questionnaire as the qualitative phase of the study. The results demonstrated that students' PBs predicted their SF. The most significant cases in the qualitative phase as well as pedagogical implications and suggestions are discussed.

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## Flujo continuo y mejores resultados personales en la educación superior: Combinación de métodos

### RESUMEN

El presente estudio se centra en dos nuevos conceptos surgidos en psicología educativa, a saber, los objetivos sobre mejores resultados personales (PB, por sus siglas en inglés) y el flujo continuo (SF, por sus siglas en inglés). Es decir, el presente estudio ahonda en los PB y el SF de los estudiantes de inglés como lengua extranjera (EFL, por sus siglas en inglés) encontrando los flujos continuos más importantes y explorando la interacción dinámica entre los PB y el SF en dos fases, cuantitativa y cualitativa. Para ello, se ha recurrido a las versiones web persas del Cuestionario sobre Mejores Resultados Personales (Martin, 2006) y de la escala de disposición de DMC (Muir, 2016) con el fin de estudiar el nexo entre los PB y el SF de los estudiantes. Esto se realiza con los Modelos de Ecuaciones Estructurales (SEM, por sus siglas en inglés) en la fase cuantitativa y el análisis de las respuestas de los estudiantes a los ítems abiertos del cuestionario DMC en la fase cualitativa del estudio. Los resultados demuestran que los PB de los estudiantes preveían su SF. Se analizan los casos más significativos en la fase cualitativa, así como las repercusiones y recomendaciones pedagógicas.

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#### Palabras clave:

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### Introduction

#### *Directed Motivational Currents (DMCs)/Sustained Flow (SF)*

Having been studied from different perspectives (Al-Hoorie, 2017), the notion of L2 (second language learning) motivation has now faced a new phenomenon called a Directed Motivational Current (Dörnyei et al., 2014) or sustained flow (Ibrahim & Al-Hoorie, 2019) which is described as an intense motivational drive supporting and stimulating long term behavior among which for-

eign/second language learning is one of the most prominent areas (Dörnyei et al., 2014). DMCs have recently entered the field of motivational studies being able of integrating many current theoretical fields with vision (Dörnyei et al., 2016; Dörnyei et al., 2015; Dörnyei et al., 2014). Vision has been defined as “the mental representation of the sensory experience of a future goal state (involving imagination and imagery), is currently at the forefront of motivational innovation, and in recent years it has been seen increasingly more often in the motivational tool kit of practicing language teachers” (Muir & Dörnyei, 2013, p. 357). In other words, SF captures the vision power and then transfers it into sustained momentum in which individuals perform at over and above levels of their normal capacities. Consequently, DMCs are unique within the field of L2 motivation and “have the capacity to align the diverse factors that are simultaneously at work in a complex system, thereby acting as a regulatory force” (Dörnyei et al., 2016, p. 96).

Dörnyei et al. (2014) have introduced the new concept in L2 motivational theories and described a DMC as a conceptual framework involving positive emotionality, salient facilitative structure, reinforcement of feedback loops, and accessibility of a new level of operation. Similarly, Dörnyei et al. (2015) provided readers by new definitions such as; “A DMC is a potent motivational surge that emerges from the alignment of a number of personal, temporal and contextual factors/parameters, creating momentum to pursue an individually defined future goal/vision that is personally significant and emotionally satisfying” (p. 103). They also asserted that DMCs have been used to transform individuals, groups and situations that lacked a clear future vision or have lost their ‘zest’, by offering a pathway of intensive motivated action having a self-propelling nature of engagement. Since the new concept may seem vague to grasp the idea, offering some examples is the best way to conceptualize a picture of the intention behind SF. Consider, for instance, “an overweight university professor who wishes to have a more healthy lifestyle but whose job necessitates too many lavish meals at conferences and too much sitting in front of computers. The life goes on until something changes; he shifts in his eating habits from a chocolate cake to an apple in the morning and salads at lunch, arranges regular exercising dates, and participates in the local gym. Gradually his efforts begin to be recognized by the friends, colleagues, and family and as a result, he loses over 20 lbs in four months” (Dörnyei et al., 2014, p. 10).

The same story is also true about a language learner who intends to learn English for a specific purpose in a limited period of time, i.e. getting a profession, going abroad, being able to grasp the foreigners and foreign books, magazines, etc. The routines change in which even the person supposes him/herself as another one who is under the control of a power and should obey the orders to succeed. Each of these scenarios represents an intense motivational drive which impacts individuals and unfolds over time. In other words, the participants featuring such experiences achieve more than they expected towards a personal goal (Dörnyei et al., 2014). Studies on SF although scant in number attempted to scrutinize the concept in different settings and from various angles. The first systematic empirical investigation of SF focused on periods of unusually intense and enduring motivation which migrant learners of Swedish as a second language may experience. In other words, the purpose of this interview-based study was to examine whether the core characteristics of SF can be identified in participants’ descriptions of sustained motivated behavior. The findings revealed that motivated behavior is characterized by features similar to those proposed by Dörnyei and his colleagues (Dörnyei et al., 2015; Dörnyei et al., 2014; Muir & Dörnyei, 2013), i.e. the presence of the direction of motivated behavior toward long-term identity investment goals, a salient facilitative structure, and the generation of positive emotionality (Henry et al., 2015). Muir and Dörnyei (2013) have also discussed current understandings of vision and

DMCs, and then analyzed the way by which they may be integrated to create effective motivational pathways in language learning environments. They have also proposed a DMC as a new motivational construct which is capable of integrating many current theoretical strands with vision and energizing long-term, sustained behavior (such as language learning). In a similar fashion, Ibrahim and Al-Hoorie (2019) explored the circumstances under which SF can be achieved and found that personal value, group identity, and partial autonomy can pave the way towards experiencing SF.

#### *Personal Bests (PBs)*

Academic personal bests (PBs) also refer to standards of excellence or personalized goals matching and exceeding an individual’s previous best in an academic context. The concept of personal best was originally utilized in sports settings and then was attributed to educational contexts as well (Martin, 2006). In other words, it was proposed that striving for personal best goals is a potentially efficient and effective way to enhance student long-term academic development. Besides these advantages, pursuing academic personal bests leads to the promotion of student self-efficacy, since performing better than a past performance is accessible by learners who improve their efficacy in their learning process (Martin, 2006). In addition to student self-efficacy, personal bests align with student intrinsic motivation (Ryan & Deci, 2000) and flow in learning (Csikszentmihalyi, 1997) both of which are related to the degree of challenge that exceeds learners’ present capacity.

Martin and Elliot (2016a), for instance, assessed the role of prior personal best goals in predicting student academic motivation and engagement by conducting a longitudinal survey study. They explored the degree of personal best and dichotomous achievement goals (mastery and performance) predicting student academic motivation and engagement across a full academic year. The findings demonstrated that personal best goals predict higher motivation and engagement a year later. Moreover, mastery goals predicted higher motivation and engagement, while the role of performance goals was either neutral or negative implying that personal best goals are associated with higher motivation and engagement across time. Goals have been found to be one of the most significant prerequisites of motivation (Ramshe et al., 2019). Additionally, the more students adapt PB goals in their language learning process, the more intrinsic motivation they experience (Arabi et al., 2018).

Similarly, the positive role of goals in students’ motivation (Elliot, 1999; Martin, 2007) and negative association of academic goals and flip side of motivation have been established (e.g. Jahedizadeh et al., 2016). Analyzing different achievement goal theories (Elliot, 1999), PB is a new concept in the educational field. Moreover, SF is a brief surge directed toward a certain goal (Ibrahim & Al-Hoorie, 2019) implying that without a goal, one may not experience SF. Hence, more evidence using new perspectives (in this case the variable of PB) was needed to support previous findings.

#### *Purpose of the study*

As it can be inferred from the long review of the two newly born notions, students’ DMCs are closely relevant to their goals. In other words, there is always a target to which individuals plan to move, otherwise no motive can be effective. In this regard, the four types of personal bests; namely, Specific, Challenging, Competitively self-referenced, and Self-improvement goals can explain the intensity of motivation found in DMC experiences in which the last type of goal as the highest level of PBs, seems to be the most significant indicator of DMCs. Therefore, it can be hypothesized that the more students adapt self-improvement goals in their learning process, the more motivational currents they will experience. On this

basis the main purpose of this study is to delve into the role of Iranian EFL learners' Personal Best goals in their experiences of DMC by finding the most crucial motivational currents and exploring the association between students' PBs and DMCs. This is accomplished by utilizing the Persian web-based versions of the Personal Best Questionnaire (Martin, 2006) and the DMC Disposition Scale (Muir, 2016) to examine whether there is a significant association between students' PBs and their DMCs. The most remarkable motivational currents relevant to the personal best goals are also explored by analyzing students' responses on open-ended items of the DMC questionnaire. Viewed from a broader perspective, the present study examines and interprets the various kinds of goals students adapt during learning a foreign language and explores the effect of such goals on the intense motivation experienced by the participants within a single framework. The results are expected to pave the way for proposing a baseline for EFL learners' PB and SF.

## Method

### Participants

The research participants were 320 Iranian students comprising 34 diplomas, 168 Bachelor of Arts (BA), and 118 Master of Arts (MA) selected according to convenience sampling among EFL learners studying English in universities and language institutes in Mashhad, a city in Iran. Their ages varied from 16 to 49 years old ( $M=24$ ,  $SD=6.77$ , median = 22.00). The majority (126) had upper-intermediate proficiency level, 22 elementary, 30 pre-intermediate, 118 intermediate, and 24 advanced students as reported by themselves took part in this study. Female participants numbered 252 (79%), while 68 were male (21%).

### Instruments

To explore student Personal Best goals, the Persian version of the *Personal Best Questionnaire* designed by Martin (2006) and translated by Ghanizadeh and Jahedizadeh (forthc) was utilized. The questionnaire comprises 16 items measuring four different types of goals namely; *specific goals* (4 items), *challenging goals* (4 items), *competitively self-referenced goals* (4 items), and *self-improvement goals* (4 items) via a 5-point Likert type response format (completely disagree, disagree, to some extent agree, agree, and completely agree). The Cronbach's alpha of the Persian version of Personal Best Questionnaire was .89 in general, and for each goal was as follows: *specific* (.81), *challenging* (.79), *competitive* (.82), and *self-improvement* (.86). The validity indices ( $\chi^2=1038.75$ ,  $df=482$ , RMSEA = .061, CFI = .89, GFI = .90, NFI = .90) also supported that the scale has acceptable internal consistency.

To determine student DMCs, the present study employed the Persian version of the *DMC Disposition Questionnaire* designed and validated by Muir (2016) and translated to Persian by Ghanizadeh and Jahedizadeh (2017). The dynamic online DMC Disposition Questionnaire consists of a number of items and questions among which 12 main statements pose *easy flow* (8 items) and *challenge* (4 items) facets of DMC via a 5-point Likert type response format (completely disagree, disagree, to some extent agree, agree, and completely agree). The results were intended to identify three key issues: (1) the proportion of people who have experienced DMCs in general; (2) The individuals who have experienced DMCs specifically; and (3) the characteristics of their experience regarding DMC (the duration and reason for beginning, etc.). The Persian version of the scale translated and validated by Ghanizadeh and Jahedizadeh (2017) was demonstrated to have adequate internal consistency (Cronbach's Alpha = .98) and validity indices ( $\chi^2=223.45$ ,  $df=106$ , RMSEA = .06, CFI = .91, GFI = .90, NFI = .90).

In addition to multiple-choice items, several open-ended questions are included to create rich additional information and allow participants to elaborate on their DMC experiences (Muir, 2016).

### Procedure

The present study utilized the Persian version of PB questionnaire and DMC scale designed in an online format in order to easily distribute and collect data. The participants were provided with the web address of the questionnaire. Having entered the password, they could access the two scales in which the former comprised a single page and the latter was designed in 10 pages. Due to the dynamic nature of the DMC Disposition Questionnaire, the items were displayed according to the responses to the previous questions. Moreover, the questionnaire does not require any explanation presented by the researchers; however, three examples were added to the original questionnaire in order to clarify the topic (Ghanizadeh & Jahedizadeh, 2017). Besides, one of the researchers' phone number was given to the participants to contact her if there was any ambiguity regarding the content of the questionnaire or if there was any problem with the web page and the researcher helped them via message or direct call. They also did not meet the researchers in person; however, some participants were researchers' students. Moreover, to receive reliable data, a page on the questionnaire assured them that their responses would be kept confidential. As an incentive, the participants were given the opportunity to receive feedback about their performance on the instrument by presenting their codes. All procedures performed in the present study involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Besides, the study received the ethical permission of Imam Reza International University of Mashhad, Iran.

### Data analysis

The responses obtained from the questionnaires were analyzed through the computation of descriptive statistics. Since a Pearson product moment correlation formula can only be conducted on linear and one-sided relationship, a Structural Equation Modeling (SEM) was used to study the involved causal relations as it explores the cause and effect associations as well as the predictive power of each variable. The proposed model was also tested by using R statistical software. Besides, we used robust maximum likelihood (MLR) estimator which can handle non-normal data.

To evaluate the model fit, the fit indices were scrutinized: the chi square/ $df$  ratio which should be lower than 2 or 3, the Normed Fit Index (NFI), the Good Fit Index (GFI), Adjusted Good Fit Index (AGFI), the Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) with the cut value greater than .90, and the Root Mean Square Error of Approximation (RMSEA) of lower than 0.1. The values of chi square/ $df$  ratio, GFI, AGFI, and NFI are influenced by extrinsic and unknown factors (such as sample size and number of items) rather than due to defects in model fit. That is, if there is no good fit in the analysis, it is due to external factors. The most common of these indices is the probability index of the chi-square statistic which illustrates the importance of the difference between the fitted model and the covariance matrix of the observed sample. The values of TLI, CFI, RMSEA, and SRMR, on the other hand, are not affected by extrinsic factors, and the result is most likely to indicate a defect in the fit of the model; that is, if not well-suited to the analysis, it is due to the nature of its model and less affected by extrinsic factors.

Regarding the qualitative phase, the content analysis was applied using MAXQDA software (2018 version) which provides

**Table 1**  
Descriptive statistics of SF, PB and their subscales

	N	Minimum	Maximum	M	SD
EASYFLOW	320	.00	40.00	27.57	9.70
CHALLENGE	320	.00	20.00	14.41	5.22
SF	320	.00	60.00	41.99	14.70
SPECIFIC	320	8.00	20.00	14.56	2.29
CHALLENGING	320	6.00	20.00	14.59	2.40
COMPETITIVE	320	8.00	20.00	15.24	2.28
SEL-IMPROVE	320	7.00	20.00	15.01	2.29
PB	320	31.00	80.00	59.41	8.38
Valid N (listwise)	320				

**Table 2**  
Reliability and average variance explained for all variables

Variable name	N of items	Cronbach's alpha	Composite reliability	AVE
Specific goals	4	.57	.90	.71
Challenging goals	4	.61	.83	.57
Competitively self-referenced goals	4	.70	.91	.72
Self-improvement goals	4	.67	.92	.74
Easy flow	8	.94	.92	.60
Challenge	4	.92	.91	.74

researchers with classifications as well as visual maps to organize the bulk of responses in an objective and well-designed manner. First, participants' responses to open-ended questions were entered and assiduously coded in the software. Then important parts of students' responses were identified by the researchers. To do so, first all the responses were scrutinized, and then the relevant themes of the study were extracted. Two essential themes with regard to PB and SF included the necessity of a goal (SF) and how students try to reach their goals (PB) which can be self-referenced or other-referenced, since the content analysis revealed that the selected themes represent the bulk of the dataset and the true reality of the phenomenon the participants experienced. In order to ensure rigor and resolve discrepancies both researchers conducted codification three different times. Besides, some participants were not clear enough in their responses. In this regard, one of the researchers was in touch with them via text messaging and asked for clarification to reach a significant content. It is worth mentioning that all the responses were in participants' native language (Persian) to let them express their opinions and feelings thoroughly.

## Results

The results of the study are presented in two distinctive phases of quantitative and qualitative in which the former consists of exploring the association between student PB goals and their SF using R software and the latter is the description of content analysis of participants' responses to open-ended questions of DMC Disposition Scale to ensure the connection between their goals and experiences of motivational currents using MAXQDA software.

### Quantitative phase

#### Descriptive statistics

Table 1 presents descriptive statistics of SF and PB goals among the participants. As the table indicates, the mean score for SF is 41.99 and the maximum score is 60.00. For PB, the mean is 59.41 and the maximum is 80.00. Among the sub-scales of PB, *self-improvement goals* ( $M = 15.01$ ,  $SD = 2.29$ ) and *competitive self-referenced goals* ( $M = 15.24$ ,  $SD = 2.28$ ) obtained the highest mean scores.

#### Reliability of the scales

To assure the reliability of the scales, Cronbach's alpha and composite reliability were calculated. Table 2 summarizes the reliability analyses. As Table 2 indicates, all variables had high reliability values ( $CR > .70$ ). Moreover, all composite reliability values are higher than average variance explained (AVE) which confirms the convergent validity of the variables. Besides, both constructs exhibited good discriminant validity through AVE analysis. The validity indices were found to be .943 and .824, for SF and PB, respectively.

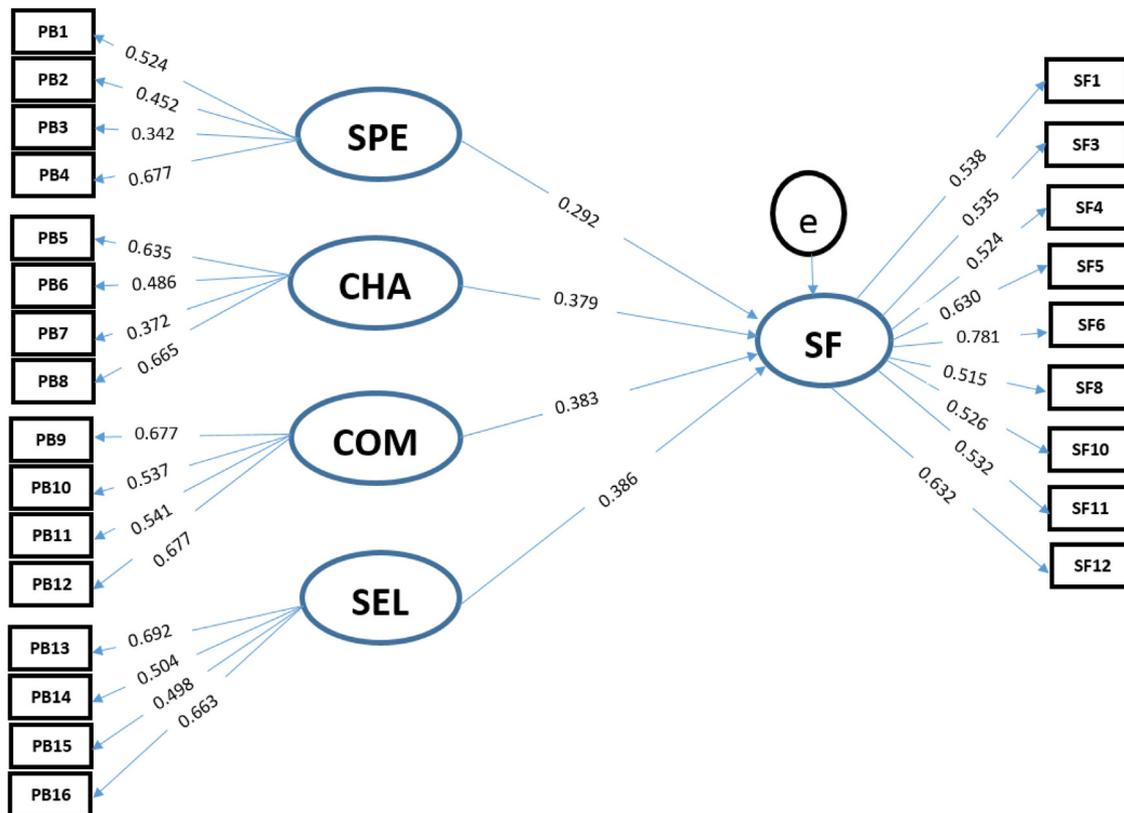
#### The structural models of the EFL learners' PB and SF

The purpose of this section is to determine the effect of PB on SF. Before running the model in R, the factor loadings of the items in each variable have been investigated and their suitability for the subsequent factor loadings exceeding 0.5 has been checked. Since SF comprises two dimensions of *easy flow* with 8 items and *challenge* with 4 items (Muir, 2016), and PB contains four sub-factors of *specific goals* (4 items), *challenging goals* (4 items), *competitively self-referenced goals* (4 items), and *self-improvement goals* (Martin, 2006), the items have been defined. After checking the magnitudes, it was found that 3 of SF items have factor loadings less than or equal to 0.35. In order to prevent weak indicators of a single factor and forcing the fit to an unnatural structure of the data, those items were removed and another analysis was run. Table 3 depicts the factor loadings of the two constructs (SPE stands for specific goals, CHA for challenging goals, COM for competitively self-referenced goals, and SEL for self-improvement goals). As can be seen, all the included items have factor loadings greater than 0.5.

The structural model is presented in Figure 1. As it can be seen, the chi-square/df ratio (2.56), the RMSEA (.08), SRMR = .009, and the CFI = .96, and TLI = .92 all reached the acceptable fit thresholds. Notwithstanding the two indices of GFI = .86, AGFI = .80 which are not greater than 0.9, the other thresholds disclose that the overall proposed model had an acceptable fit with the empirical data. The model also indicated significant effects of the four PB subfactors (SPE, CHA, COM, and SEL) on SF ( $p$ -value  $< .05$ ). Moreover, according to the regression coefficient, all the factors affected SF directly with SEL and COM as the two most significant contributors to SF. The standardized coefficients, standard deviations, test statistics, and  $p$ -values concerning the association between PB subfactors and SF are illustrated in Table 4.

**Table 3**  
Factor loadings of SF, PB and their items

Factors/ subfactors	Items	Standardized factor loadings	SD	Test statistics	P-values	
SF	SF1	0.538	0.058	9.206	0	
	SF3	0.535	0.058	7.441	0	
	SF4	0.524	0.059	6.613	0	
	SF5	0.630	0.055	11.52	0	
	SF6	0.781	0.052	15.092	0	
	SF8	0.515	0.059	6.62	0	
	SF10	0.526	0.057	8.46	0	
	SF11	0.532	0.058	7.22	0	
	SF12	0.632	0.056	11.27	0	
	SPE	PB1	0.524	0.057	9.149	0
		PB2	0.452	0.054	8.429	0
		PB3	0.342	0.055	6.199	0
PB4		0.677	0.052	13.586	0	
CHA	PB5	0.635	0.052	12.141	0	
	PB6	0.486	0.055	8.91	0	
	PB7	0.372	0.055	6.793	0	
	PB8	0.665	0.051	13.036	0	
COM	PB9	0.677	0.05	13.646	0	
	PB10	0.537	0.052	10.356	0	
	PB11	0.541	0.051	10.647	0	
	PB12	0.677	0.05	13.603	0	
	PB13	0.692	0.05	13.755	0	
	PB14	0.504	0.053	9.563	0	
SEL	PB15	0.498	0.053	9.456	0	
	PB16	0.663	0.051	12.962	0	
SPE	CHA	1.152	0.047	24.355	0	
	COM	1.126	0.041	27.787	0	
	SEL	1.076	0.043	24.792	0	
CHA	COM	1.131	0.036	31.426	0	
	SEL	1.08	0.039	28.02	0	
COM	SEL	1.192	0.033	36.395	0	



**Figure 1.** The schematic representation of the association between PB subfactors and SF.

**Table 4**

The regression coefficients of the relationship between SPE, CHA, COM, SEL and SF

Association	Standardized coefficients	SD	Test statistics	P-values
SPE-SF	0.392	0.082	3.689	0
CHA-SF	0.398	0.087	4.594	0
COM-SF	0.391	0.082	4.794	0
SEL-SF	0.392	0.082	4.804	0

### Correlations

To explore the relationship between SF and the sub-scales of PB, multiple correlations were also run. The results are presented in Table 5. As can be seen, all the four goals positively and significantly correlated with SF. The highest correlation was observed between SF and self-improvement goals ( $r = .75, p < .05$ ). The second higher correlation was found between SF and specific goals ( $r = .71, p < .05$ ).

### Qualitative phase

In the quantitative phase, except thirty-four participants who have never experienced DMC, other students reported themselves as those experiencing DMC. The results of content analysis revealed that not all two hundred eighty-two participants have experienced DMC. Two open-ended questions were provided the former of which required the participants to describe their specific experience regarding DMC (*Would you mind writing a few sentences about how this intense period of motivation began?*) and the latter to explain whether they tend to experience such a motivational current again. They were also asked to provide reasons (*Would you like to experience this type of intense motivation again? why or why not?*). Since experiencing DMC involves moving towards a specific goal and the purpose of the present study is to find the association between students' goals and their experiences of motivational currents, the researchers identified four main groups of goals concerning their DMC experiences in content analysis. The name of each classification was then given to each of them. In other words, participants who have experienced or were experiencing DMC and participants without DMC were classified and eventually four groups (competitively other-referenced goals, competitively self-referenced goals, ambiguous goals, and absence of DMC experience) were distinguished according to their specific goals (the name of the second classification was taken from Martin (2006) which was originally used to categorize one of Personal Best goals).

In the followings, the descriptions of each group are presented and then the responses extracted from participants with the highest scores on each DMC group are provided. The participants provided their responses in Persian to express their emotions easily which were then translated to English.

**1 Competitively other-referenced goals** (76 out of 320 participants): Participants in this categorization experienced DMC to reach a specific goal while competing with others. To put it differently, students of this group tend to compete with other people and somehow struggle with them to achieve their goal. In the present study most of the protocols were in response to taking part in BA, MA, or PhD Entrance Exams that are all norm-referenced tests focusing on highlighting achievement differences among students to produce a rank order (Ghanizadeh & Jahedizadeh, 2017). At first glance, one may perceive that passing a norm-referenced test is one of many extrinsically motivated behaviors. A student, for instance, may have been told that he/ she will have a place in the family business if only he/ she passes the entrance exam, goes to university, and graduates. On the other hand, a student may only have intrinsic motivation to pass the exam for future success. Although both scenarios are possible, the cases included in this category were carefully selected not to be

confused with intrinsic or extrinsic motivation. In other words, participants admitted that their goal to pass the entrance exam was for personal achievement and success for which they tried day and night and did not consider any other goals for a period of time and many other signs of DMC were also mentioned in their responses.

*"I had experienced such an intense motivation when I was studying for MA entrance exam. I tried day and night but. . . but I didn't succeed that time and lost my motivation totally. I even didn't want to continue my studies! Then . . . getting familiar with one of the best professors at university, I started to recover from a very disappointing circumstance. I started to learn from my failures and compete with my rivals in PhD entrance exam. I couldn't stop attempting to reach my goal. It was as if I wanted to revenge from all the stuff and staff because of my previous failure. And finally . . . finally I succeeded. I couldn't believe my eyes when I saw my name among the students who have passed the exam successfully. . .!!!!. Now when I remember those days I cannot believe that it was me who didn't give up and it is as if I was another person those days. Yeah. . . that was exactly intense motivation which controlled my whole behavior. Now I wish to experience it as soon as possible, since there are still many things I want to achieve and such an intense motivation causes me to make possible all impossibilities! And I'm sure without having that motivation I couldn't succeed".*

**2 Competitively self-referenced goals** (100 out of 320 participants): Participants in this categorization experienced DMC to reach a specific goal not competing with others but with themselves. In other words, individuals in this group tend to compete with themselves rather than other people and try to act better than before to achieve their goals.

*"Good old days. . . I wanted to go abroad in order to continue my education and then find a job related to my major. From the moment I decided to do so, something strange happened to me. Believe it or not, I didn't have any place to live or any money to afford my usual life. One of my best friends accommodated his office and provided food for me!!! Sometimes I carried passengers with his car to earn some money. Sitting in front of the computer in the morning, I even didn't realize that it's the time to sleep, since I was busy with my research. Another important issue was my English which I was supposed to improve it as soon as possible to pass TOEFL. So, I bought relevant materials and studied them!!! Now. . . I live in Finland and just enjoy my life. I have visited other countries in Christmas too such as London and Germany! . . . When I think about those days, I think something enchanted me which I couldn't think about anything else!!!! It was terribly difficult and exhausting experience but at the same time enjoyable!!! For sure I tend to experience it again, since it made me a person who does not give up even in the most difficult situations. It was not just the motivation, but something rather different with more and more power that made me a successful person".*

**3 Ambiguous goals** (106 out of 320 participants): Some participants in this categorization explained something which was considered as experiencing DMC in their own points of view but after

**Table 5**  
The correlation coefficients between SF and PB goals and their subfactors

	1	2	3	4	5	6	7	8
1.Easy flow	1							
2.Challenge	.930**	1						
3.Specific goals	.261**	.261**	1					
4.Challenging goals	.247**	.272**	.776**	1				
5.Competitively goals	.209**	.238**	.727**	.707**	1			
6.Self-improvement goals	.192**	.208**	.693**	.669**	.835**	1		
7.SF	.991**	.970**	.265**	.260**	.222**	.201**	1	
8.PB	.254**	.274**	.894**	.882**	.912**	.891**	.266**	1

\*\*Correlation is significant at the 0.01 level (2-tailed).

scrutinizing their responses, researchers of the present study found that they were just experiencing motivation to do a particular task, but not an intense motivation related to DMC. Put it in other words, the participants in this group were mistakenly considering their motivation as DMC which were simply the state of motivation. Some of them also did not answer obviously and hesitated to explain the whole experience and their specific goal. Consequently, as their responses were vague they were categorized in this group.

*"I had a very high motivation and continuous effort. Moreover, I was optimistic regarding the results of my action and was enjoying the time allocation to this specific goal. The best moments were the time when I got that I succeeded and after then I tried to apply it to other aspects of my life."*

4 Absence of goals (no DMC) (38 out of 320 participants): As the name suggests, this group of participants did not express any experiences applying DMC to achieve a particular goal. This classification can be seen in [Figure 2](#) taken from MAXQDA software.

[Table 6](#) indicates the frequency and percentage of DMC scores in each group (group 1: competitively other-referenced goals, group 2: competitively self-referenced goals, group 3: ambiguous goals, and group 4: absence of DMC). As it can be seen out of 320 participants, 76 participants (24%) belonged to competitively other-referenced goals group, 100 participants (31%) belonged to competitively self-referenced goals group, 106 participants (33%) belonged to ambiguous goals group, and 38 participants (12%) belonged to absence of goals group. Moreover, out of 320 participants, only 176 (Group 1 and group 2) experienced DMC.

Moreover, out of 320 participants, only 176 (Group 1 and Group 2) experienced DMC. This finding emphasizes the fact that the conceptualization of DMCs as any intense motivational engagement is simply not true representation of DMCs. DMCs are unique, not-so-common experiences whereby people are caught in intense motivational currents toward highly-powerful, personalized, and life-changing goals which are qualitatively different from passing any life event. The results indicated that students who adapt a particular goal in their life ranging from competitively self-referenced goals to competitively other-referenced objectives are particularly more likely to experience intense levels of motivation. This is an encouraging finding given that most of the previous studies on students' motivation towards EFL learning showed that students' goals affect their motivation (e.g. [Elliot, 1999](#); [Elliott & Dweck, 1988](#); [Martin & Elliot, 2016a](#)). Similarly, student DMC as an uncharted territory may be determined by learning goals (i.e. qualitative phase also supports the finding due to participants' responses to open ended questions).

In previous PB-related studies (e.g. [Martin, 2006, 2007, 2012](#); [Martin & Elliot, 2016b](#)) and DMC-associated studies (e.g. [Dörnyei et al., 2015](#); [Dörnyei et al., 2014](#); [Henry et al., 2015](#); [Muir & Dörnyei, 2013](#)) the variables in question were often investigated to intro-

duce, describe, and elaborate on the new concepts theoretically. The current study contributes to the understanding of the association between learners' PB and their SF within a single framework empirically. The qualitative phase also sought to identify the most motivational currents of EFL students by analyzing and categorizing open ended responses on DMC Disposition Scale. In this regard, the majority of responses were related to competitively self-referenced goals than other-referenced objectives; however, the number of students who have experienced DMC to compete with others were not scant in number in which the latter mostly comprised taking part in BA, MA, or PhD Entrance Exams ([Ghanizadeh & Jahedizadeh, 2017](#)) that are all norm-referenced tests focusing on highlighting achievement differences among students to produce a rank order ([Stiggins, 1994](#)).

## Discussion

In light of the findings, we propose an approach that makes compromises between the PB goals and SF in higher education. Accommodating different classroom projects by English language teachers may be a feasible starting point for EFL students to develop awareness of the role of goals and motivational currents in their success and achievement. In this way, learners get familiar with their strengths and weaknesses, talents, and proceeding tendencies. Learners are then allowed to gradually build up their buoyancy and confidence in their abilities. More and more studies are needed to be carried out in order to explore the two concepts of PB goals and DMCs in relation to some other cognitive or psychological variables such as; burnout, self-regulation, self-efficacy, etc. Other relevant studies can also be done to investigate the relationship between the two constructs and demographic variables such as age, gender, proficiency and educational levels, etc.

Taken together, this study was an attempt to represent the importance of understanding the two concepts of PB and SF. As [Henry et al. \(2015\)](#) contended, DMCs are uniquely different from other types of motivated behavior and engagement. The researchers of the present study highlighted the direct role of PB goals in SF giving rise to student success by presenting both quantitative and qualitative data.

The present study is limited in a number of ways. First, due to feasibility considerations, the participants were chosen according to convenience sampling. Second, the participants of the study comprised EFL learners in language institutes and universities of Mashhad. So this study is expected to be replicated with samples from official schools and centers in different parts of the country and use procedures that ensure a higher degree of randomization and ultimately more generalizability. This can also set the ground for the cross comparison of the findings. Third, in this research, the variables in question were assessed via questionnaires and student responses to open-ended questions which were considered as the qualitative data. Using case studies, diaries, and observations to investigate these constructs would allow prospect researchers to understand not only if potential interrelationships exist between

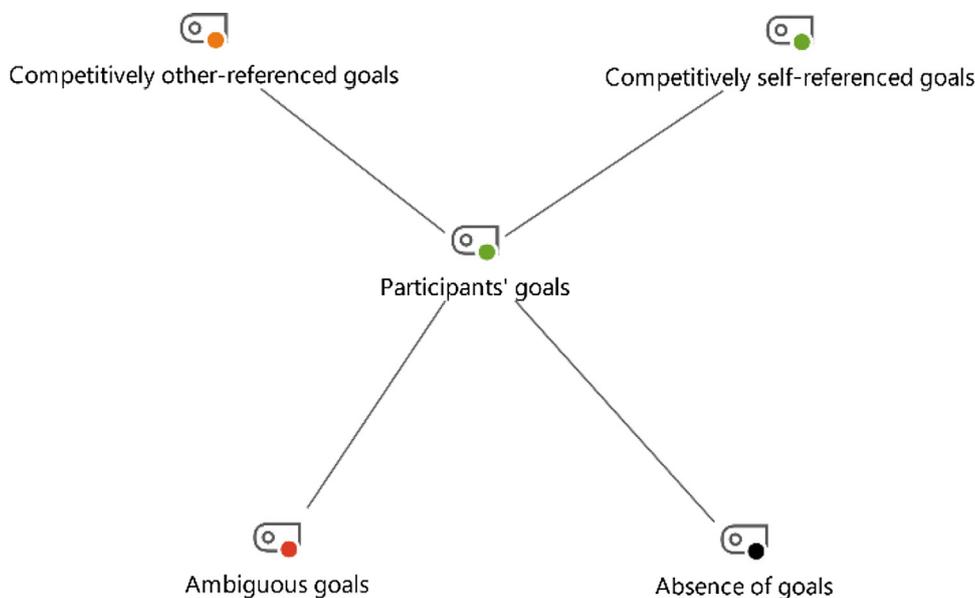


Figure 2. The schematic representation of the four classifications.

Table 6  
Frequency and percentage of the four groups of participants

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Group 1	76	23.8	23.8	23.8
	Group 2	100	31.3	31.3	55.0
	Group 3	106	33.1	33.1	88.1
	Group 4	38	11.9	11.9	100.0
	Total	320	100.0	100.0	

the constructs, but also the processes by which these constructs develop in the classroom context. Fourth, the present study almost entirely focused on goal-orientedness feature of SF, and not much the other properties of the phenomenon. The reason of this decision was the nature of the present study which investigated SF in terms of PB which is a kind of goal. Finally, the indices of Cronbach alpha in three subscales of PB (specific, challenging, and self-improvement goals) had low reliability values and therefore, interpretations about them should be taken into account with more caution.

Nevertheless, the researchers attempted to address at least a couple of limitations pertaining to the study. For instance, endeavor was made to include students from various age groups, from two different contexts, with different educational levels and backgrounds, and of both genders. Moreover, we tried to principally situate the study within a firm and established theoretical framework. Only then, the hypotheses were formulated and tested. Furthermore, we have initially attempted to present theoretical models and contentions in the literature signifying the theoretical associations between the constructs in order to justify and back up conducting an empirical study on the variables in question.

Appendix A.

- Items of PB scale
- Specific goals
  - I set specific goals to aim for in my schoolwork
  - I get a clear idea about specific things I'm trying to achieve in my schoolwork
  - I aim for specific results in my schoolwork
  - I get it clear in my head what specific goals I'm aiming for in my schoolwork
- Challenging goals

- I set challenging goals for myself in my schoolwork
- I aim for goals in my schoolwork that challenge me
- I set challenges for myself in my schoolwork
- I like to work towards challenging goals in my schoolwork
- Competitively self-referenced goals
  - I am in competition with myself more than with other students
  - I compete with myself more than with other students
  - I compete with my own previous performances more than I compete with other students
  - I compete with my own previous marks more than I compete with other students'
- Marks
- Self-improvement goals
  - When I do my schoolwork, I try to do it better than I've done before
  - When I do my schoolwork, I try to do the best that I've ever done
  - When I do my schoolwork, I try to do better than I've done before
  - When I do my schoolwork, I try to get a better result than I've got before

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