Can Learning for Exams Make Students Happy? Faculty-Related and Faculty-Unrelated Flow Experiences and Well-Being

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Abstract
Flow is a highly enjoyable, optimal psychological state people feel when they are so focused on a task that it amounts to complete absorption in an activity. Flow was found to be related to desirable educational outcomes as well as higher well-being. The aim of this study was to assess how often students experience flow at the faculty (during lectures, seminars and exercises, learning, preparing for presentations and other study-related activities) and in everyday life, and to assess the relationship between the flow experiences of students and their well-being.

The sample comprised 176 second-year female students at the University of Zagreb, the Faculty of Teacher Education. In addition to the questions about faculty-related and unrelated flow experiences, the participants filled in two questionnaires: the Satisfaction with Life Scale (Diener et al., 1985) and the Flourishing Scale – FS (Diener et al., 2009).

The results revealed that students, at least occasionally, experience flow while carrying out faculty-related activities. The participants experience flow most frequently while preparing for seminars and similar tasks as well as while preparing for exams, and least frequently during lectures. Flow experiences in non-academic activities are more frequent than in the academic activities. However, only the flow in the academic activities is positively correlated to students’ well-being while there are no significant correlations between the non-academic flow experiences and well-being. The only significant predictor of well-being was the flow students experienced while preparing for exams. That leads to the conclusion that the flow experienced during activities related to achievement at the faculty is more important for students’ well-being than the flow experienced during activities in other areas of life.

Key words: flourishing; flow; life satisfaction; university students; well-being.
Introduction

Flow is a highly enjoyable state of consciousness where people are so focused on a task that it amounts to complete absorption in an activity (Csikszentmihalyi, 1975). It is characterized by a merging of action and awareness, sense of control, high concentration, loss of self-consciousness, and transformation of time (Csikszentmihalyi, 1975, 1990; Nakamura & Csikszentmihalyi, 2002). In other words, one becomes so completely involved in a task that he or she forgets time, fatigue, everyday problems, hassles and everything else but the activity itself.

The research on flow has mainly focused on leisure domains such as sport or art (Abuhamdeh & Csikszentmihalyi, 2009; Delle Fave, Bassi, & Massimini, 2003; MacDonald, Byrne, & Carlton, 2008; Smolej Fritz & Avsec, 2007) since leisure activities are freely chosen and allow expression and cultivation of personal skills. But, flow experiences have also been found in the domains of work (Csikszentmihalyi & LeFevre, 1989; Delle Fave & Massimini, 2003) and education (Asakawa, 2010; Delle Fave & Bassi, 2000; Engeser & Rheinberg, 2008; Engeser, Rheinberg, Vollmeyer, & Bischoff, 2005; Shernoff, Csikszentmihalyi, Shneider, & Shernoff, 2003) that mainly involve compulsory activities.

Several previous studies found that work promoted flow more than both leisure and maintenance activities (Csikszentmihalyi & LeFevre, 1989; LeFevre, 1988; Ullen et al., 2012). Contrary to this finding, work was found to be the weakest flow-promoting domain in a sample of students (Ullen et al., 2012). Ullen et al. (2012) suggest that this is because students presumably often have relatively simple jobs as extra sources of income alongside their studies. In other words, their basic work is to study and therefore learning and other academic activities are potentially more flow-promoting than part-time work, leisure, or maintenance activities. However, there is no study investigating the role of faculty-related and faculty-unrelated activities in promoting flow in students. This study is aimed to fill this gap in the literature. In line with previous research showing that work is a more flow-promoting activity than leisure (Csikszentmihalyi & LeFevre, 1989; LeFevre, 1988; Ullen et al., 2012) and in line with the notion that students’ work is to study, we hypothesized that students will have flow experiences more frequently in faculty-related activities than in the activities not related to the faculty (Hypothesis 1).

The second aim of the present study was to investigate associations between flow in faculty-related activities (academic domain) and activities not related to the faculty (non-academic domain) and students’ well-being. Earlier studies found that flow is positively related to well-being (Asakawa, 2004, 2010; Ishimura & Kodama, 2006; Jackson, Kimiecik, Ford, & Marsh, 1998). For example, one study found that Japanese college students who experienced flow more often showed higher self-esteem, lower anxiety, used active coping strategies more often, were more committed to college life and search for a future career, and had a greater sense of fulfilment and greater life satisfaction than the students who experienced flow less often (Asakawa, 2010). However, there is no study investigating how flow is experienced in different domains.
related to well-being. Therefore, this study is aimed to investigate the role of flow in academic and non-academic activities in subjective and psychological well-being. Subjective well-being is a concept derived from hedonic approach, and focuses on a high degree of satisfaction with one’s life, experiencing a high level of positive emotions, and low level of negative emotions (Kahneman, Diener, & Schwartz, 1999). On the other hand, psychological well-being stems from eudaimonic approach (Waterman, 1993), and focuses on meaning and self-realization. Within this approach well-being is defined in terms of the degree to which a person is fully functioning (Ryan & Deci, 2001). Studies have shown that hedonic and eudaimonic concepts of happiness are two highly correlated but separated constructs (Linley, Maltby, Wood, Osborne, & Hurling, 2009; Gallagher, Lopez, & Preacher, 2009). Based on the importance of study in students’ lives, we hypothesized that flow experiences in academic activities will be more strongly associated with students’ well-being (both life satisfaction and flourishing) than their flow experiences in non-academic activities (Hypothesis 2).

**Method**

**Participants and Procedure**

The sample comprised 174 second year female students at the University of Zagreb, the Faculty of Teacher Education. They participated voluntarily and anonymously during the regular course in psychology.

**Measures**

*Flow Questionnaire*. The frequency of flow in different activities was assessed by a modification of the *Flow Questionnaire* (FQ, Csikszentmihalyi, 1975; Delle Fave & Massimini, 2004). The FQ presents three descriptions of flow experience (e.g. “My mind isn’t wandering. I am not thinking of something else. I am totally involved in what I am doing...”). In addition to that, we added the section which consisted of 6 items by which respondents assess frequency of flow experience in different activities. The respondents are asked to read quotations and then to indicate on a 5-point scale (from “1 – never” to “5 – always”) how often they had such experiences in academic activities (5 items: during exam preparation, lectures, seminars, preparation for various obligatory tasks and other faculty-related activities) and in non-academic activities (1 item).

*The Life satisfaction scale* developed by Diener, Emmons, Larsen, and Griffin (1985) was used to measure the respondents’ overall life satisfaction. The scale has 5 items (e.g. “In most ways my life is close to my ideal.”). Participants rate each item on a Likert type 7-point scale (from 1 – *strongly disagree* to 7 – *strongly agree*). Higher result indicates higher subjective well-being. In this study, Cronbach’s alpha coefficient of reliability was .80.

*The Flourishing Scale* (Diener et al., 2010) is used as a measure of the respondents’ self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. It has 8 items (e.g. “I lead a purposeful and meaningful life.”) which are rated on a 7-point Likert type rating scale (from 1 – *strongly disagree* to 7 – *strongly agree*).
agree). The scale provides a single psychological well-being score. Higher result indicates higher psychological well-being. In this study, Cronbach's alpha coefficient of reliability was .80.

### Results

#### Descriptive Statistics

Descriptive statistics and inter-correlations of all of the measured variables are presented in Table 1. Inspection of the mean frequencies of the students’ faculty-related and faculty-unrelated flow experiences showed that flow most frequently occurs in non-academic activities. The flow experienced during non-academic activities was experienced frequently or always by 73% of students. All faculty-related flow experiences have lower average ratings. In the academic domain flow was experienced frequently or always during preparations for various obligatory tasks by 52.3% students, followed by flow experienced during seminars (32.7%), flow induced while preparing for exams (32.7%), and flow experienced in other activities related to the faculty (21.8%). The least frequent was flow experienced during lectures (19.6%).

As expected, the associations between various flow measures were mostly positive (13 out of 15 were positive, ranging from r=.15 to r=.51, while two correlations were not significant). The associations between faculty-related flow measures and both well-being measures were also positive, while there was no association found between the flow induced by the activities unrelated to the faculty and the well-being measures.

<table>
<thead>
<tr>
<th>Flow during...</th>
<th>1. exam preparation</th>
<th>2. lectures</th>
<th>3. seminars</th>
<th>4. preparation for various tasks</th>
<th>5. other faculty-related activities</th>
<th>6. faculty-unrelated activities</th>
<th>7. life satisfaction</th>
<th>8. flourishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. exam preparation</td>
<td>1</td>
<td>.15</td>
<td>.35**</td>
<td>.39**</td>
<td>.35**</td>
<td>.19*</td>
<td>.29”</td>
<td>.29”</td>
</tr>
<tr>
<td>2. lectures</td>
<td>1</td>
<td>.51**</td>
<td>.28”</td>
<td>.32”</td>
<td>-.06</td>
<td>.10</td>
<td>.14</td>
<td></td>
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<tr>
<td>3. seminars</td>
<td>1</td>
<td>.50**</td>
<td>.49”</td>
<td>.22”</td>
<td>.08</td>
<td>.21”</td>
<td></td>
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<tr>
<td>4. preparation for various tasks</td>
<td>1</td>
<td>.48”</td>
<td>.34”</td>
<td>.15”</td>
<td>.20”</td>
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<tr>
<td>5. other faculty-related activities</td>
<td>1</td>
<td>.29”</td>
<td>.10</td>
<td>.18”</td>
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<td>6. faculty-unrelated activities</td>
<td>1</td>
<td>.07</td>
<td>.09</td>
<td></td>
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<tr>
<td>7. life satisfaction</td>
<td>1</td>
<td>.42”</td>
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<td>8. flourishing</td>
<td>1</td>
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</tbody>
</table>

**Note.** WB – Well-being. *p < 0.05; ** p < 0.001

### Frequency of Flow Experiences in Academic and Non-Academic Domain

In order to test Hypothesis 1, i.e. to explore differences between flow experiences in various activities, repeated measures ANOVAs were used with different activities as a
within-subject factor with six levels (exam preparation, lectures, seminars, preparation of various obligatory tasks, other faculty-related activities, and faculty unrelated activities). A significant effect of activities was found \[ F(1,173) = 10.16; p = .002 \] and pairwise comparisons are shown in Table 2.

<table>
<thead>
<tr>
<th>1. ... exam preparation</th>
<th>2. ... lectures</th>
<th>3. ... seminars</th>
<th>4. ... preparation for various tasks</th>
<th>5. ... other faculty-related activities</th>
<th>6. ... non faculty-related activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>.645</td>
<td>.001</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
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</tbody>
</table>

Table 2
Significance of differences in flow experiences between various activities

These results do not support the hypothesis that students will have flow experiences more frequently in faculty-related activities than in the activities unrelated to the faculty. Flow experiences in the non-academic domain are significantly more frequent than flow in any activity in the academic domain. Among the academic activities flow experiences were the most frequent in the activities which involved preparations for various obligatory tasks. Flow experienced in this activity is significantly higher than in any other academic activity. Flow during lectures is the least frequent and is significantly different from all other activities (except in other faculty-related activities).

**Flow Experiences and Well-Being**

In order to test whether flow experiences in faculty-related activities are more strongly associated with students’ well-being than the flow experiences in faculty-unrelated activities (Hypothesis 2), two linear regression analyses were performed. Faculty-related and faculty-unrelated flow experiences were predictor variables and

<table>
<thead>
<tr>
<th>Flow in...</th>
<th>Life satisfaction</th>
<th></th>
<th></th>
<th>Flouishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>... exam preparation</td>
<td>.295</td>
<td>3.577**</td>
<td>.234</td>
<td>2.851**</td>
</tr>
<tr>
<td>... lectures</td>
<td>.108</td>
<td>1.214</td>
<td>.050</td>
<td>.563</td>
</tr>
<tr>
<td>... seminars</td>
<td>-.107</td>
<td>-1.068</td>
<td>.059</td>
<td>.592</td>
</tr>
<tr>
<td>... preparation for various tasks</td>
<td>.061</td>
<td>.649</td>
<td>.053</td>
<td>.567</td>
</tr>
<tr>
<td>... other faculty-related activities</td>
<td>-.022</td>
<td>-.244</td>
<td>.025</td>
<td>.280</td>
</tr>
<tr>
<td>... non faculty-related activities</td>
<td>.027</td>
<td>.327</td>
<td>.006</td>
<td>.075</td>
</tr>
</tbody>
</table>

\[ R^2 = .314**; \quad F = 3.045; \quad p = .007 \]

\[ R^2 = .322**; \quad F = 3.209; \quad p = .005 \]

*Note:* \( p < 0.05; \quad ** p < 0.001.\)
life satisfaction and flourishing were criteria variables. The results are presented in Table 3. The multiple regression analyses showed that flow experiences explained 10% of the variance in life satisfaction and 10% of the variance in flourishing. Only flow experiences induced by exam preparation, i.e. learning, were found to be significant predictors in both regressions. Thus, the results are in line with Hypothesis 2 suggesting that both the subjective and psychological well-being of students may be to some degree explained by the flow experienced while studying for exams.

Discussion

The results revealed that students, at least occasionally, experienced flow during faculty-related activities. Half of the students experienced flow during preparations for various obligatory tasks, one third while preparing for exams and during seminars, while flow was found to be least frequent in lectures. 73% of students experienced flow during non-academic activities. Contrary to our expectations, we found that flow was experienced less frequently in faculty-related activities compared to activities unrelated to the faculty. It seems that, at least for students in this sample, activities unrelated to the faculty have more flow potential. Experiencing flow is one reason for getting involved in activities without external rewards, i.e. it provides reasons for intrinsic motivation. Therefore, based on our results, students would be less inclined to learn and prepare for exams compared to doing activities which are not related to the faculty, but rather are related to playing, leisure or recreation. In other words, they would be less intrinsically motivated for preparing exams and other faculty-related activities in this respect.

Among faculty-related activities, preparations for various obligatory tasks (followed by exam preparation) are more flow-inducing than all other activities. This is in line with the data obtained with high school students suggesting that homework is more frequently associated with flow than are schoolwork activities (Delle Fave, 1996). Bassi and Delle Fave (2004) suggested that this discrepancy may be related to the different degree of autonomy and self-regulation offered by the two activities. One study (Stupinsky, Perry, Renaud, & Hladkyj, 2013) demonstrated that perceived academic control has an inverse relationship with boredom and anxiety and a slightly direct relationship with enjoyment. Since academic control is the lowest during lectures, they might induce boredom and anxiety that prevent students from having flow experiences. A study by Shernoff, Knauth, and Makris (2000) found that students enjoyed individual work more than lectures. Individual work was perceived most positively in terms of academic challenge, affect, control, and motivation. Lectures were reported as unchallenging, inducing negative affect and lower levels of control. Bearing in mind that students spend a considerable amount of time in the classroom passively listening to teachers, they may not be adequately challenged or motivated to learn.

Regression analyses show that the only significant predictor of well-being (both life satisfaction and flourishing) was the flow experienced during learning and preparing
Students who experienced flow during preparation for exams had higher levels of well-being.

Passing exams has important consequences for students, and academic success is shown to be related to students’ well-being at all educational levels (El Ansari & Stock, 2010; Gilman & Huebner, 2003; Verkuyten & Thijs, 2002). However, most studies are cross-sectional and it is difficult to infer whether academic success influences well-being or vice versa. Some findings suggest the relationship between well-being and academic performance may be reciprocally causal (Quinn & Duckworth, 2007). Well-being can positively influence academic achievement, but academic achievement can further increase students’ well-being.

Previous studies have shown that higher flow in learning is associated with higher performance (Engeser & Rheinberg, 2008). Therefore, it may be that flow in learning leads to higher academic success, which in turn leads to higher well-being. In other words, it seems that in second years’ student sample flow related to academic success serves as the fuel for life satisfaction and flourishing. At the same time, flow experienced in non-academic activities, although more frequent, is not relevant for students’ well-being. Thus, the results of the study suggest that flow experienced in highly important activities has important correlates in terms of life satisfaction and flourishing, than the flow experienced in less important activities.

**Practical Implications**

The results of this study have some important practical implications for higher education. Since students’ well-being is associated with experiencing flow while preparing for exams (i.e. while learning), scheduling more short tests in the course of one semester may be useful, as well as giving students the assignments, homework and other activities which stimulate learning. It seems that current activities at the faculty (especially lectures) have no high flow potential. Therefore, there is room for improvement of these activities in terms of their flow-inducing potential. On the basis of the flow theory (Csikszentmihalyi, 1975; 1990) one may assume that new activities/assignments for students, which are more enjoyable and more challenging, would also benefit students’ well-being. It also seems that students’ involvement is of critical value. A previous study found that students who had teachers who structured classes around their students’ involvement experienced more flow than did students with other instructional approaches (Coleman, 1994).

Engeser and Rheinberg (2008, p. 159) suggested that "if the task is considered to have very important consequences, flow should only be experienced when skill exceeds difficulty... since the threat of potential failure will hinder the experience of flow. However, if skill is higher than difficulty, a person feels more comfortable and this should make flow more likely". Because passing exams has important consequences, it seems that preparing for exams is the type of activity in which it is important to have higher skills than is task difficulty. Therefore, skills needed for successful exam
preparation are essential, such as various cognitive skills (learning skills), metacognitive skills (planning, time organization...). Faculties should offer their students programmes for improving these skills, which is especially important for the students who lack these skills, such as hyperactive individuals.

**Limitations and Future Directions**

This study has several limitations. The first limitation is its cross-sectional design that does not allow tests of causality. It is possible that flow experiences positively influence well-being, but well-being could also impact students’ ability to experience flow. In addition to that, the sample comprised only female second year students from one faculty and it is unclear whether the findings would generalize to male or older students from other faculties. Future research should include longitudinal studies with various groups of students. Since this study suggests that the importance of the activities inducing flow might be crucial for well-being, this variable should be included in the future research both of faculty-related and unrelated activities.

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Može li nas učenje za ispit učiniti sretnima? Iskustva zanesenosti na fakultetu i dobrobit studenata

Sažetak


Ključne riječi: dobrobit; psihološki napredak; studenti; zadovoljstvo životom.