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Academic functional procrastination: Validity and reliability study

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Abstract

When the relevant literature about Procrastination behavior, also known as postdating of tasks, is studied, it is stated that this behavior isn't always negative and there can be functional procrastinations, as well. Functional procrastination represents an acceptable frequent behavior which increases success at work, makes persons more advantageous and acts as a success strategy towards a pre-designed goal that generally results in success at work. It is seen that procrastination behavior, mostly seen among students, is not sufficiently researched because of the fact that there aren't any scales, functional features of which are improved. Within this context, the objective of the research is to develop a scale that can assess the functional procrastination behavior of the students. For this reason, total 365 students of different demographic features and in different grades are taken into account. Exploratory Factor Analysis (EFA) was applied to the scale for the structure validity of the scale, and single factor structure became apparent. Then, Confirmatory Factor Analysis (CFA) was applied to the relevant structure. This CFA analysis was performed with new data taken from 295 students. After the Confirmatory Factor Analysis (CFA) was performed, concordance values of Academic Functional Procrastination Scale was found as follows: $\chi^2/df = 55.08/27$ (2.04); RMSEA, .05; CFI, .96; GFI, .95; NFI, .94; IFI, .97; and RFI, .90.

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1. Introduction

There are many researches in academic world that aims to explain students' academic lives with different variables. In recent years, there have been many efforts to explain students' academic lives with procrastination

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behavior, either as a result or as a reason. There exists also an academic side of this behavior which is defined as unrealistically postdating of tasks to be completed (Lay, 1988). Academic procrastination behavior is a problem mostly seen in tasks expected from students such as preparing for exams, doing homework, postponing the meeting or the project to be performed with academic consultant (Dryden, 2000; Milgram, Mey-Tal and Levison, 1998). In a study performed on 135 students, Onwuegbuzie (2004) found that approximately 40% - 60% of the students did some kind of academic procrastination. According to a study performed by Balkis and Duru (2009) nearly 23% of students do academic procrastination. This academic procrastination behavior results in negative consequences on students such as academic failure (Burka and Yuen, 1983; Ferrari, Johnson and McCown, 1995; Knaus, 1998; falling behind in difficult classes (Rothblum, Solomon and Murakami, 1986), dropping out school (Knaus, 1998), negatively influencing of mental health (Tice and Baumeister, 1997), disorders of guiltiness, panic, tension, anxiety, inability. Is this academic procrastination behavior negative in reality as it is always evaluated from a negative perspective? Or does the individual perceive procrastination behavior negative? According to Farran (2004) some people think that they make use of life by doing procrastination. According to Ferrari (1994) procrastination is a position that people wish to be in to gain favor or increase their performances. He believes that intentional procrastination behavior can be strategy for the person to motivate himself and act more controlled, and that person can make best of his works under the influence of procrastination in a limited time. When it is considered within this context, procrastination can be positive or negative. According to Ferrari (1994) this situation can be defined as 'functional procrastination' and 'non-functional procrastination'. He defines functional procrastination as frequent acceptable procrastination when this kind of procrastination helps to increase the probability of success at work. Functional procrastination represents an acceptable frequent behavior which increases success at work, makes persons more advantageous and acts as a success strategy towards a pre-designed goal that generally results in success at work. He defines non-functional procrastination as a chronic and inappropriate tendency to postpone starting to perform tasks or completing them. Consequently, it is possible to define non-functional procrastination as a behavior that impedes the success at work, and constructive feature of which is frequently low. When it is considered within this context, it can be said that mostly non-functional parts are discussed in the researches about academic procrastination. In that these researches considered procrastination as a problem. Therefore it is possible to say that the scales used within this context are relevant to non-functional procrastination. However; students' procrastination behavior can have functional features, as well. Procrastination can be used as a motivation tool (expressed by Brownlow and Reasinger (2000) and as a relief tool (expressed by Tice and Baumeister (1997). Scale tools are needed within this context in order to determine whether academic procrastination is a motivation tool or not and whether it has functional consequences or not. For this reason it is aimed to improve academic procrastination scale.

2. Methods

The study for developing "Academic Functional Procrastination Scale" was applied to students of Faculty of Education in Kırıkkale University. Data was taken from students two times. First data set was used for Exploratory Factor Analysis and the second data set was used for confirmatory factor analysis that came into being after exploratory factor analysis. In the first data set total 365 students in different grades (210 female and 155 male) were taken into account. In the second data set total 295 students (170 female and 125 male) were taken into account. Working group used to improve the scale was consisted of students in different grades. When the total number is considered, 660 students are taken into account for the validity and reliability of the scale. Students comprising the working group are from different grades as follows (159 of them are 1st grade; 157 of them are 2nd grade; 186 of them are 3rd grade and 190 of them are 4th grade students). Initially relevant literature about the terms 'procrastination, academic procrastination, functional and non-functional procrastination' was studied during the process of developing "Academic Functional Procrastination Scale". Then an 'item pool' was formed that consisted 15 items within this context. The items in the pool were formed as appropriate as possible for the relevant literature and measurement rules. The scale was five point likert scale and 'strongly agree' and 'strongly disagree' rating method was used in this scale. Then the items in the pool regarding the functional procrastination were forwarded to 4 field expert and they reviewed these items. After this review process carried out by field experts, no item was discarded but 3 of them were amended. Later on, the scale consisting of 15 items was applied to research group and they were subjected to SPSS and LISREL programs. The analysis and its results were given in the part 'Findings'.

3. Findings

Appropriateness of the data for the sampling group obtained by applying measurement tool as a first phase in the validity process of Academic Functional Procrastination Scale was found as 0,001 by using Kaise-Meyer-Olkin test. Following the analysis Kaise-Meyer-Olkin =89.1 value was found. The data obtained from this test shows that the data was appropriate for Exploratory Factor Analysis. In the next phase Exploratory Factor Analysis was performed in order to determine the factor structure of the scale by means of the obtained data. After the factor analysis, the scale was found to have a single factor structure. As factor loading values of 6 items were below the intended value, these items were left out of the scale. For factor analysis intended factor loading value was determined as 40. When it is considered within this context, 9 items were found to be higher than the intended value.

Table 1: Factor analysis results of academic functional procrastination scale

No	Items	FactorValues
2	As I know the exact time when I can learn best in some lessons, I procrastinate on my lessons until that time.	.73
5	I know the time to learn well.	.72
7	I procrastinate on studying some examinations intentionally as I prepare my class notes and contemplate how to study in my mind.	.70
14	Sometimes I become more successful when I postpone my academic tasks (doing homework, preparing for exams etc.)	.69
1	I have procrastinated on my lessons in some cases in order to be motivated for them	.64
9	Even if academic tasks (studying, preparing for exams etc.) are procrastinated, students can become successful.	.63
12	I procrastinate on studying important lessons to the time when I learn best.	.59
15	Saying that I can't study anymore, I leave studying and I learn better when I study later.	.57
6	Although I procrastinate on my academic tasks (doing homework, preparing for exams etc.) I continue discussing, and planning them in my mind.	.57

In the factor analysis performed as regards to the structure validity of the scale, it was seen that factor loading that had the necessary feature to measure one dimension changed between .57 and .73. It was seen that obtained single factor structure explained 43.70% of the variance of academic functional procrastination. When these results are taken into account, it is seen that structure validity is acceptable in the first phase. Confirmatory Factor Analysis (CFA) was carried out by using Lirsal 8.71 program in order to assess the validity of Academic Functional Procrastination Scale's single factor structure. By means of CFA both the representation power of items and correlation of their sub-dimensions are assessed. Following CFA concordance values of AFPS are analyzed. According to DFA results concordance indexes are as follows: $\chi^2 /sd = 55.08 / 27 (2.04)$; RMSEA, .05; CFI, .96; GFI, .95; NFI, .94; IFI, .97; and RFI, .90. All these values show that the scale has a good concordance value. Coefficients that are measured with CFA regarding item-factor relationship are given in Figure 1.

Figure 1 shows single factor model of AFPS, and the relationship between the structure within the model and items within the factor. Values on the lines drawn towards the item (observed variable) from the factor (latent variable) represent influence quantity (standardized coefficients) of the factor on the item; values on the lines coming to items from outside represent variance ratio that can't be explained with the items. It is seen that correlation coefficients between factor and items are rather high for all of the items. It is seen that the lowest of these coefficients belonging to the single factor structure is .48 and the highest is .69. Furthermore all factor-item correlations were found to be significant at .01 levels. In addition to CFA, in order to evaluate how reliable the points taken from AFPS were, Cronbach alpha internal-consistency coefficients were reviewed based on the item analysis. Analysis results are given in the table below.

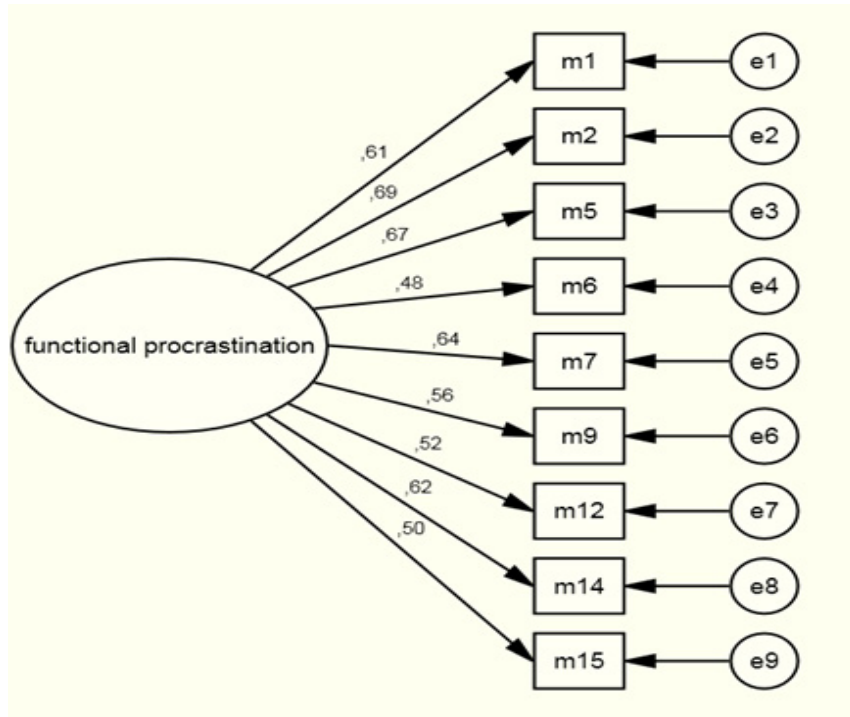


Fig. 1. CFA Results of AFPS

Table 2: Total item correlation results of academic functional procrastination scale

No	Items	Total Item Correlation
2	As I know the exact time when I can learn best in some lessons, I procrastinate on my lessons until that time.	.52
5	I know the time to learn well.	.62
7	I procrastinate on studying some examinations intentionally as I prepare my class notes and contemplate how to study in my mind.	.61
14	Sometimes I become more successful when I postpone my academic tasks (doing homework, preparing for exams etc.)	.45
1	I have procrastinated on my lessons in some cases in order to be motivated for them	.59
9	Even if academic tasks (studying, preparing for exams etc.) are procrastinated, students can become successful.	.51
12	I procrastinate on studying important lessons to the time when I learn best.	.48
15	Saying that I can't study anymore, I leave studying and I learn better when I study later.	.58
6	Although I procrastinate on my academic tasks (doing homework. preparing for exams etc.) I continue discussing, and planning them in my mind.	.46

Considering the Table 2 it is seen that item total correlations of the items within the scale change between .46 and .62. With this processes Academic Functional Procrastination Scale took its last shape. A scale that aims to define academic functional procrastination levels of the students was developed with this research. The newly developed scale was found to have high points in terms of validity and reliability. Following the research single sub-factor structure of academic functional procrastination scale was determined. When the relevant literature was taken into

account, no scale similar to Academic Functional Procrastination Scale was found. But functional procrastination scale was found to cover scale items when its definitions, scope and features were taken into account (Brownlow and Reasinger, 2000). Ferrari (1994) explains that students' academic procrastinations can be evaluated as useful or not useful and within this context evaluates its useful side as functional. Ferrari also explains that non-functional procrastination behavior results from inability self-regulation. When it is considered within this context, functional procrastination behavior can be thought to have a self-regulation aspect. Brownlow and Reasinger (2000) express that some students use academic procrastination as a motivation tool. Creswell (1994) also highlighted functional procrastination behavior of students. The things expressed by these researchers on functional procrastination are covered by the newly-developed scale. For example, items (1, 2 and 5) show learning motivation and items (6 and 7) show self-regulation strategies. When it considered within this context, it is possible to say that newly-developed academic functional procrastination scale is a scale that can be used within the context of procrastination literature. Data was collected from university students in order to develop academic functional procrastination scale. When age factor is considered, age group to which this scale can be applied is adolescents and over-adolescents. Furthermore, nature of functional procrastination behavior can be better understood by using this scale on issues such as procrastination, success, academic life, motivation, learning styles, self-regulation, and life-satisfaction. Understanding whether students' functional procrastination actions are a motivation tool or learning, life style can be regarded as another contribution of Academic Functional Procrastination Scale. That the scale's validity and reliability coefficients are assessed again with new data can help scale to be more qualified. With this newly-developed scale academic procrastination behavior may have gained a new aspect.

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