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TEACHER PROFICIENCY SCALE VALIDITY AND RELIABILITY STUDY

Project nº 2020-1-BE02-KA201-074798

The trial form of the scale was applied in four countries (Belgium, Portugal, Slovenia and Turkey) for the validity and reliability studies of the Teacher Efficacy Scale to prevent early leaving. Study; It was conducted with 131 teachers from Belgium, 157 from Portugal, 134 from Slovenia and 560 from Turkey. The findings obtained as a result of the analysis of the data obtained from each country are presented below.

Belgium

Validity Studies

In order to examine the statistical structure validity of the scale, exploratory factor analysis was performed using principal component analysis. As a result of the first analysis, a single factor structure was reached. Since the factor load of the first item was .331, this item was removed from the scale and the analysis was performed again.

In the second analysis, the Kaiser-Meyer-Olkin (KMO) coefficient was calculated as .828. As a result of the principal components analysis, it was determined that 9 items in the scale were gathered under 1 factor with an eigenvalue greater than 1. The total variance explained by this factor is 47.523%.

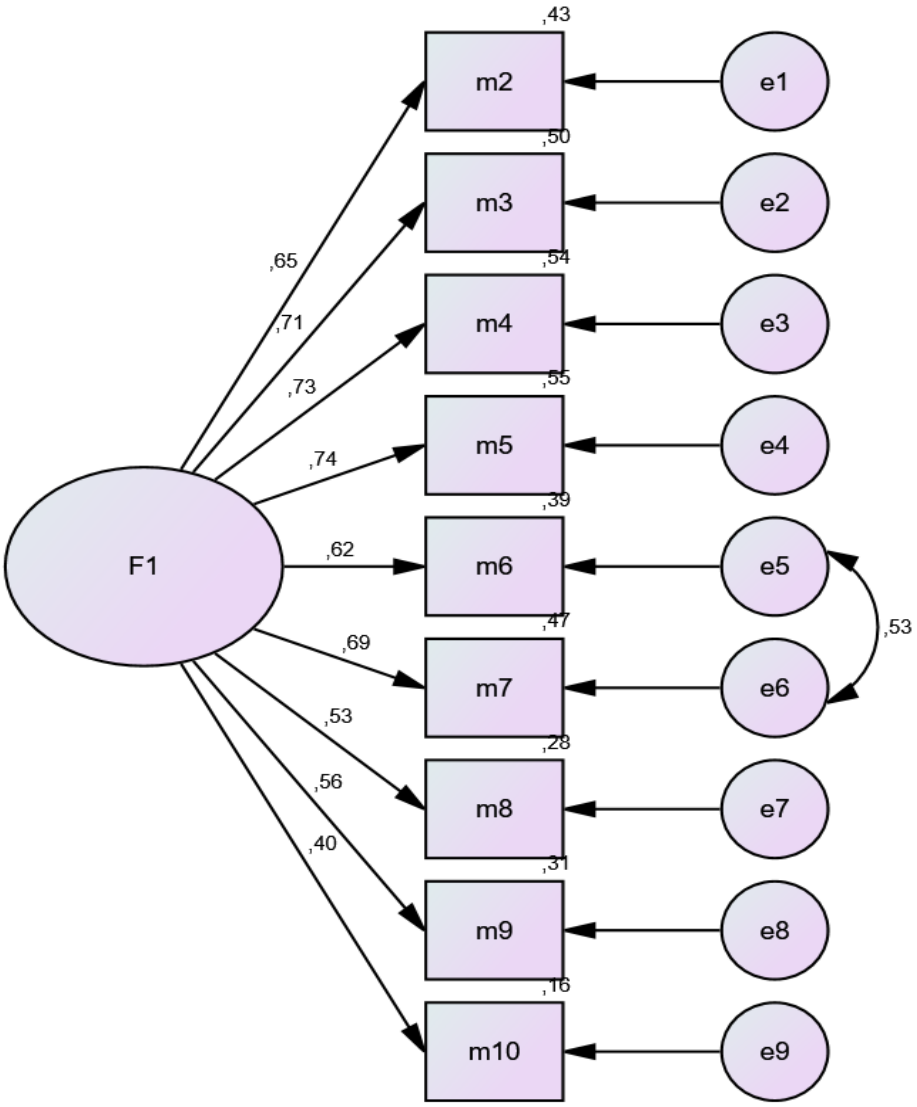
Table 1. Principal Components Analysis Results

Item No	Factor Load Value
7	.785
5	.762
4	.748
6	.733
3	.731
2	.684
8	.622
9	.618
10	.462

* Explained Variance: 47.523

The psychological structure validity of the scale was tested with confirmatory factor analysis (CFA). The CFA results of the scale are given in Figure 1 and the fit indices of the obtained model are given in Table 2. Factor loadings for the latent variable of teacher efficacy ranged from .40 to .74. The standardized regression coefficients of the model and all paths found in the model are statistically significant.

Figure 1. Teacher Competency Scale CFA Result



Tablo 2. Fit Indices of the Model

χ^2/sd	GFI	CFI	RMSEA
1.892	.932	.946	.083

As seen in Table 2, χ2/sd, GFI, CFI, RMSEA indices of the model have acceptable fit values. According to these results, it was accepted that the single-factor structure of the scale was confirmed.

Reliability Studies

The Cronbach Alpha internal consistency coefficient was calculated for reliability. The Cronbach Alpha internal consistency coefficient of the scale is .851. This value can be accepted as an indication that the scale makes stable measurements.

Portugal

Validity Studies

In order to examine the statistical construct validity of the scale, exploratory factor analysis was performed using principal component analysis. As a result of the first analysis, a two-factor structure with an eigenvalue greater than 1 was reached. Since the first and third items had high and close factor loads in both factors, these items were removed from the scale and the analysis was performed again.

In the second analysis, the Kaiser-Meyer-Olkin (KMO) coefficient was calculated as .817. As a result of the principal components analysis, it was determined that 8 items in the scale were gathered under 1 factor with an eigenvalue greater than 1. The total variance explained by this factor is 49.800%.

Table1. Principal Components Analysis Results

Item No	Factor Load Value
7	.802
8	.789
6	.776
9	.760
5	.688
10	.605
4	.604
2	.577

* Explained Variance: 49.800

The psychological structure validity of the scale was tested with confirmatory factor analysis (CFA). The CFA results of the scale are given in Figure 1 and the fit indices of the obtained model are given in Table 2. Factor loadings for the latent variable of teacher efficacy ranged from .42 to .81. The standardized regression coefficients of the model and all paths found in the model are statistically significant.

Figure 1. Teacher Competency Scale CFA Result

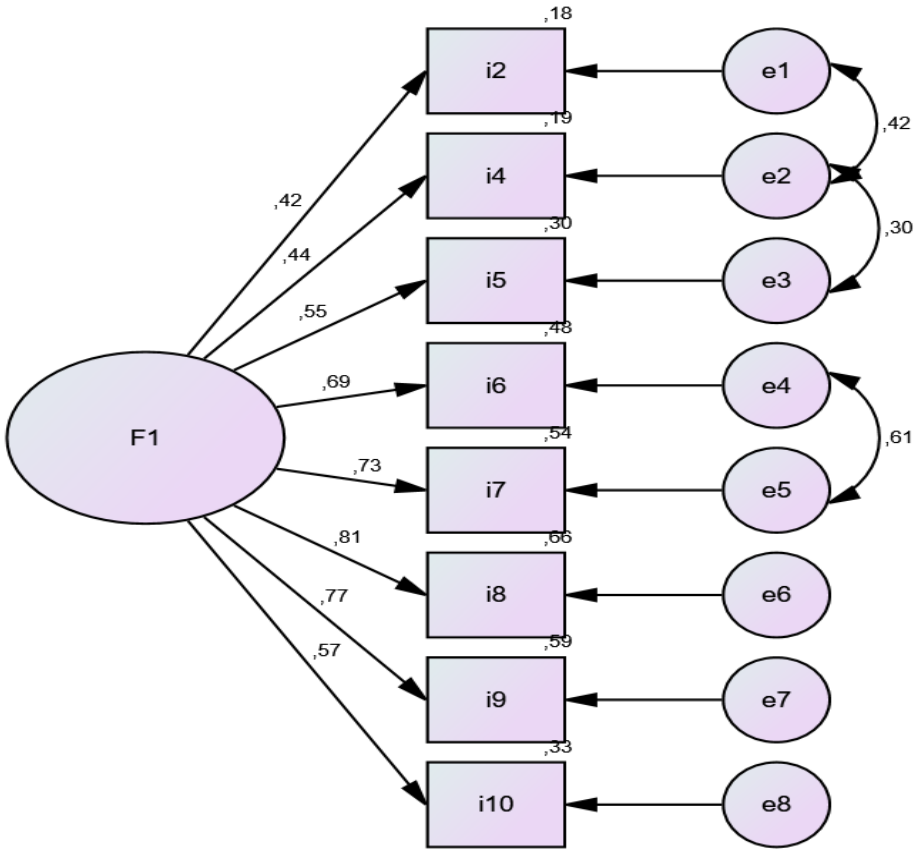


Table 2. Fit Indices of the Model

χ^2/sd	GFI	CFI	RMSEA
2.146	.944	.964	.086

As seen in Table 2, χ2/sd, GFI, CFI, RMSEA indices of the model have acceptable fit values. According to these results, it was accepted that the single-factor structure of the scale was confirmed.

Reliability Studies

The Cronbach Alpha internal consistency coefficient was calculated for reliability. The Cronbach Alpha internal consistency coefficient of the scale is .853. This value can be accepted as an indication that the scale makes stable measurements.

Slovenia

Validity Studies

In order to examine the statistical structure validity of the scale, exploratory factor analysis was performed using principal component analysis. As a result of the first analysis, a two-factor structure with an eigenvalue greater than 1 was reached. Since the first and third items had high and close factor loads in both factors, these items were removed from the scale and the analysis was performed again.

In the second analysis, the Kaiser-Meyer-Olkin (KMO) coefficient was calculated as .832. As a result of the principal components analysis, it was determined that 8 items in the scale were gathered under 1 factor with an eigenvalue greater than 1. The total variance explained by this factor is 48.841%.

Table 1 . Principal Components Analysis Results

Item No	Factor Load Value
7	.792
6	.763
8	.744
9	.740
10	.663
5	.652
4	.620
2	.590

* Explained Variance: 48.841

The psychological construct validity of the scale was tested with confirmatory factor analysis (CFA). The CFA results of the scale are given in Figure 1 and the fit indices of the obtained model are given in Table 2. The factor loads for the latent variable of teacher efficacy range from .45 to .80. The standardized regression coefficients of the model and all paths found in the model are statistically significant.

Figure 1. Teacher Competency Scale CFA Result

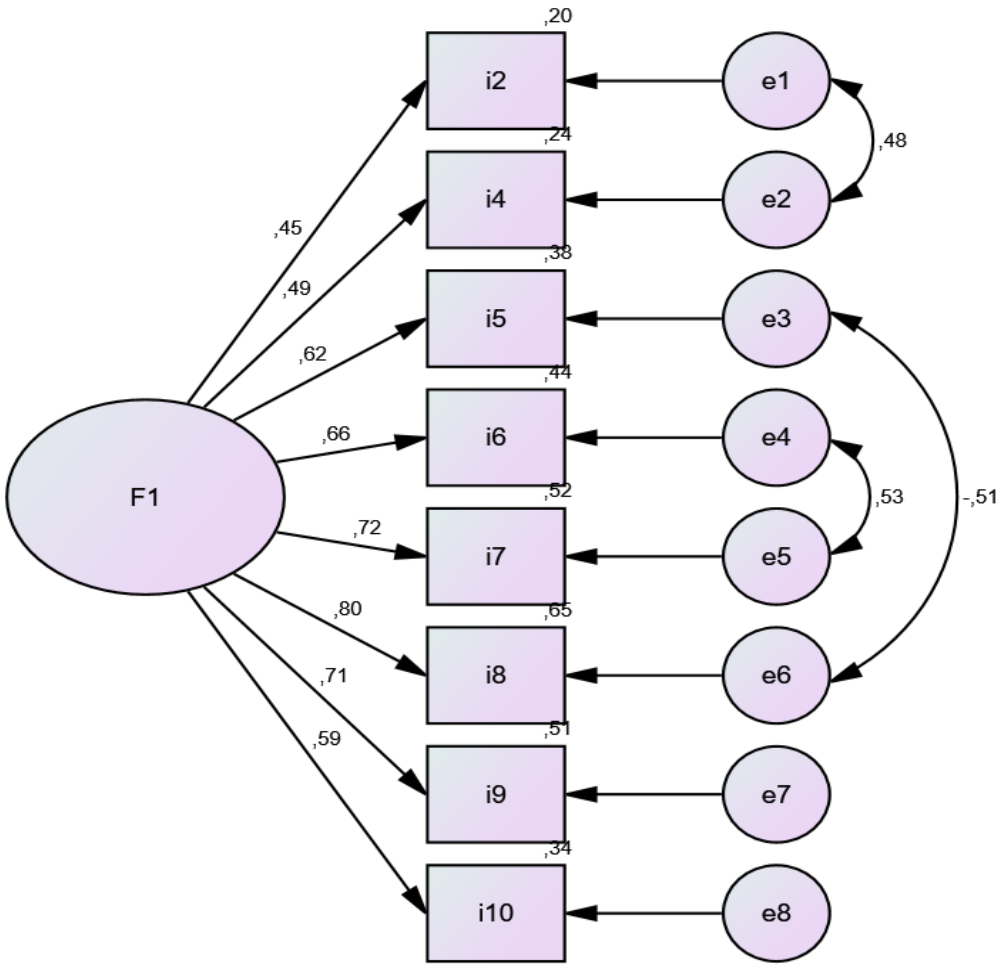


Table 2. Fit Indices of the Model

χ^2/sd	GFI	CFI	RMSEA
1.513	.953	.979	.062

As seen in Table 2, χ2/sd, GFI, CFI, RMSEA indices of the model have acceptable fit values. According to these results, it was accepted that the single-factor structure of the scale was confirmed.

Reliability Studies

The Cronbach Alpha internal consistency coefficient was calculated for reliability. The Cronbach Alpha internal consistency coefficient of the scale is .848. This value can be accepted as an indication that the scale makes stable measurements.

Turkey

Validity Studies

In order to examine the statistical construct validity of the scale, exploratory factor analysis was performed using principal component analysis. As a result of the first analysis, a two-factor structure with an eigenvalue greater than 1 was reached. Since the first item had a high and close factor loading in both factors, this item was removed from the scale and the analysis was repeated.

In the second analysis, the Kaiser-Meyer-Olkin (KMO) coefficient was calculated as .843. As a result of the principal components analysis, it was determined that 9 items in the scale were gathered under 1 factor with an eigenvalue greater than 1. The total variance explained by this factor is 49.376%.

Table 1. Principal Components Analysis Results

Item No	Factor Load Value
9	.765
4	.741
8	.732
3	.699
5	.696
2	.681
7	.681
10	.662
6	.661

* Explained Variance: 49.376

The psychological construct validity of the scale was tested with confirmatory factor analysis (CFA). The CFA results of the scale are given in Figure 1 and the fit indices of the obtained model are given in Table 2. Factor loadings for the latent variable of teacher efficacy ranged from .43 to .84. The standardized regression coefficients of the model and all paths found in the model are statistically significant.

Figure 1. Teacher Competency Scale CFA Result

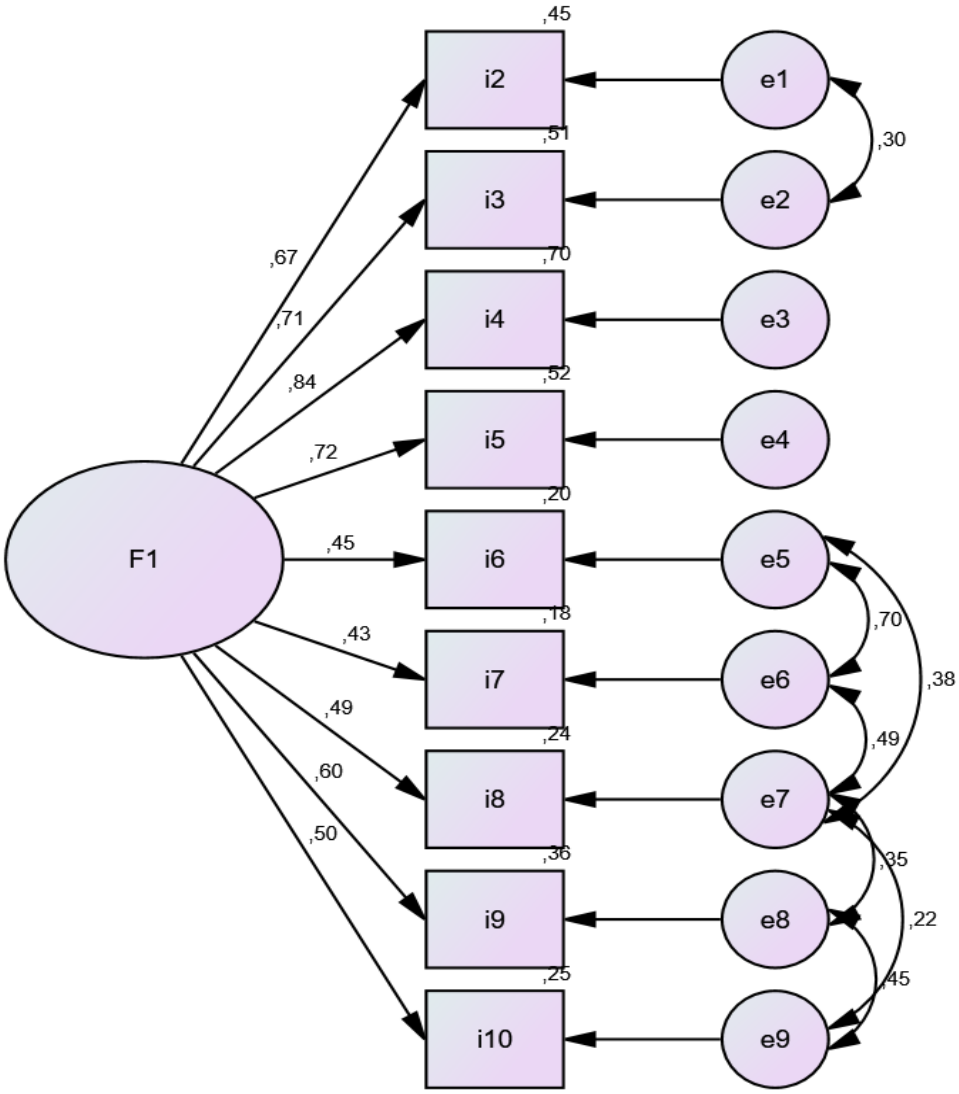


Table 2. Fit Indices of the Model

χ^2/sd	GFI	CFI	RMSEA
4.144	.968	.974	.075

As seen in Table 2, χ2/sd, GFI, CFI, RMSEA indices of the model have acceptable fit values. According to these results, it was accepted that the single-factor structure of the scale was confirmed.

Reliability Studies

The Cronbach Alpha internal consistency coefficient was calculated for reliability. The Cronbach Alpha internal consistency coefficient of the scale is .866. This value can be accepted as an indication that the scale makes stable measurements.

Result

In order to develop a common measurement tool that can be applied in all four countries, the first and third items were removed from the data obtained from the countries and the analysis was repeated. Analysis results are given in Table 1.

Table 1. Analysis Results Obtained After Removing the First and Third Items

	Belçika	Portekiz	Slovenya	Türkiye
KMO	.811	.817	.832	.818
Number of Factors	1	1	1	1
Explained Variance	47.639	49.800	48.841	50.305
Lowest Peak Factor Loads (EFA)	.477-.793	.577-.802	.590-.792	.634-.776
Lowest Peak Factor Loads (CFA)	.415-.748	.420-.815	.450-.803	.501-.872
χ^2/sd	1.885	2.146	1.513	2.554
GFI	.941	.944	.953	.985
CFI	.952	.964	.979	.989
RMSEA	.082	.086	.062	.063
Reliability (Cronbach Alfa)	.832	.853	.848	.855

According to the values in Table 1, it was decided that the final form of the scale for all countries would consist of 8 items. As such, it can be said that the scale is a valid and reliable measurement tool that can be used to measure teachers' competencies in preventing early leaving.

DROP ME OUTSIDE

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Final Forms of the Scale

ENGLISH

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COMPETENCE SCALE FOR TEACHERS IN PREVENTING SCHOOL DROPOUT

Dear Teacher,

This scale has been prepared to determine your competencies in preventing school dropout. Your answers to the questions in the scale will not be used to **evaluate or criticize** you. These questions **do not have correct answers** for everyone. For this reason, please carefully read all the questions given below and indicate your answer by marking the most appropriate option for you.

Age: …… Gender: …….. Branch (Subject): ……. Seniority:…….

Use the following criteria to answer the questions. If the statement in the question is **absolutely correct for you, tick (5); Tick (1) if it is absolutely wrong** about you. If your statement is for you

Absolutely wrong for me. **1 2 3 4 5** **Absolutely Right for me.**

1	I know the reasons for school dropout.	(1) (2) (3) (4) (5)
2	I know the characteristics of students who tend to drop out of school.	(1) (2) (3) (4) (5)
3	When I evaluate socio-economic and environmental factors, I can notice those who tend to drop out of school in my class.	(1) (2) (3) (4) (5)
4	I know at least one of the measurement tools used to detect students who tend to drop out of school.	(1) (2) (3) (4) (5)
5	I can interpret the scores obtained from the measurement tools for dropout tendency.	(1) (2) (3) (4) (5)
6	I can prepare an action plan to prevent school dropout.	(1) (2) (3) (4) (5)
7	I can offer at least one suggestion on how to prevent school dropout.	(1) (2) (3) (4) (5)
8	I am confident in effective communication methods and techniques.	(1) (2) (3) (4) (5)

TURKISH

OKUL TERKİNİ ÖNLEMEDE ÖĞRETMEN YETERLİK ÖLÇEĞİ

Project nº 2020-1-BE02-KA201-074798

Değerli Öğretmenim,

Bu ölçek okul terkini önlemede yeterliklerinizi belirlemek amacıyla hazırlanmıştır. Ölçekte yer alan sorulara verdiğiniz yanıtlar, kesinlikle **sizi değerlendirmek** ya da sizi **eleştirmek** amacıyla **kullanılmayacaktır**. Bu soruların herkes için geçerli **doğru yanıtları bulunmamaktadır**. Bu nedenle lütfen aşağıda verilen tüm soruları dikkatle okuyarak yanıtınızı, ifadenin karşısındaki seçeneklerden sizin için en uygun olanı işaretleyerek belirtiniz.

Yaş:…… Cinsiyetiniz:…….. Branşınız: ……. Kıdem:…….

Soruları yanıtlamak için aşağıdaki ölçütleri kullanın. Soruda geçen ifade sizin için **kesinlikle doğru ise (5)**'i; sizinle ilgili **kesinlikle yanlışsa (1)**'i işaretleyin. Eğer ifadenin size göre doğruluğu bunlardan farklı ise sizin için en uygun düzeyi gösteren (1)'le (5) arasındaki rakamı işaretleyin.

Benim için Kesinlikle Yanlış. **1 2 3 4 5** **Benim için Kesinlikle Doğru.**

1	Okul terkinin nedenlerini bilirim.	(1) (2) (3) (4) (5)
2	Okul terki eğiliminde olan öğrencilerin özelliklerini bilirim.	(1) (2) (3) (4) (5)
3	Sosyo-ekonomik ve çevresel faktörleri değerlendirdiğimde sınıfımda okul terki eğiliminde olanların farkına varabilirim.	(1) (2) (3) (4) (5)
4	Okul terki eğiliminde olan öğrencileri tespit etmede kullanılan ölçme araçlarından en az bir tanesini biliyorum.	(1) (2) (3) (4) (5)
5	Okul terki eğilimini ölçme araçlarından alınan puanları yorumlayabilirim.	(1) (2) (3) (4) (5)
6	Okul terkini önlemek için bir eylem planı hazırlayabilirim.	(1) (2) (3) (4) (5)
7	Okul terkinin nasıl önlenebileceği konusunda en az bir öneri sunabilirim.	(1) (2) (3) (4) (5)
8	Etkili iletişim yöntem ve teknikleri konusunda kendime güvenirim.	(1) (2) (3) (4) (5)

DROP ME OUTSIDE

Co-funded by the Erasmus+ Programme of the European Union

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General objectives of the project are decreasing the school dropout in the partner countries in a holistic approach by developing education programs for students, online tests tools for teachers and students and increasing the teachers' competencies related to the preventing school dropout and making a contribution to the related measure around Europe.

The first target group of the project are teachers who can be more successful by attending professional solutions than individual solutions, and who need practical tools nto detect the students who are at the risk of hidden or apparent dropout, who need to know how they can handle the situation of the dropout and what the innovative methods to prevent it, and who also need training.

The other target group are the students (who are at the risk of school dropout, who need a better quality of learning process and conditions. The factors that influence their dropout should be defined and eliminated and their relation with the school should be improved.

The project will involve 16 schools in the test and implementation, 800 teachers in competency tests, will educate 240 teachers in all partners country, test 480 students on the school dropout tendency test and educate 240 students to be better equipped to prevent their school leaving.

Partners of the project are:

CODEC vzw, Belgium – applicant organization www.codecvzw.eu

GO! Atheneum Leopoldsburg, Belgium - www.campusflx.be

Necmettin Erbakan Üniversite, Turkey - www.erbakan.edu.tr

KIRSEHIR IL MILLI EGITIM MUDURLUGU, Turkey - www.arge40.com

Smart Idea, Slovenia - www.erasmus-projects.eu

SOLSKI CENTER VELENJE, Slovenia - www.scv.si

Agrupamento de Escolas de àguas Santas, Portugal

JumpIN Hub - Associação para a Inovação e Empreendedorismo – www.jumpinhub.com