

Estratto del Verbale n. 29 e dei relativi allegati della Commissione esaminatrice contenenti l'elenco delle domande estratte e non estratte, le prove di idoneità di lingua inglese estratte e non estratte predisposte per il colloquio orale del profilo C CTER che si è svolto in data 2 dicembre 2020.

Concorso pubblico, per titoli e esami, per l'assunzione a tempo determinato presso l'INVALSI di n. 32 unità di personale di cui n. 29 unità nel profilo di Collaboratore Tecnico Enti di Ricerca (CTER), VI livello professionale, e n. 3 unità nel profilo professionale di Collaboratore Amministrativo - VII livello professionale di cui al D.P.R. 171/1991. Pubblicato sulla Gazzetta Ufficiale - 4^a Serie Speciale - Concorsi n. 58.

[...]

Fanno parte integrante del presente verbale:

- Allegato 6 – Profilo C (Buste scelte contenenti domande)
- Allegato 7 – Profilo C (Buste non scelte contenenti domande)
- Allegato 8 – Profilo C (Buste scelte con prova di idoneità di inglese)
- Allegato 9 – Profilo C (Buste non scelte con prova di idoneità di inglese)

[...]

Domande
Profilo CTER - C

Busta 2

1. I test di significatività di una stima statistica: in quali situazioni sono necessari e quali possibilità offre SPSS.
2. Descrivere almeno due modi per calcolare delle statistiche descrittive in SPSS.

Domande
Profilo CTER - C

Busta 3

1. L'analisi della varianza applicata ai dati INVALSI.
2. Quali sono in SPSS i procedimenti per ricodificare una variabile da stringa in numerica e da numerica in stringa?

Domande
Profilo CTER - C

Busta 4

1. Gli aspetti fondamentali di un piano di campionamento probabilistico.
2. Fare un esempio di test non parametrico.

Domande
Profilo CTER - C

Busta 5

1. Cosa si intende per centratura di una variabile e perché si fa?
2. Descrivere i possibili tipi di unione tra *dataset* che si possono fare in SPSS.

Domande
Profilo CTER - C

Busta 6

1. La standardizzazione di una variabile: effetti interpretativi.
2. Quali passi bisogna seguire in SPSS per unire a un *dataset* esistente delle variabili contenute in un altro *dataset*?

Domande
Profilo CTER - C

Busta 7

1. Le tecniche di trattamento dei dati mancanti.
2. Quale comando permette di effettuare un'analisi fattoriale in SPSS?

Domande
Profilo CTER - C

Busta 9

1. Il modello di regressione lineare multivariato: principali aspetti interpretativi.
2. Descrivere la procedura per la creazione di una variabile numerica e una variabile stringa in SPSS.

Domande
Profilo CTER - C

Busta 10

1. La correlazione lineare: definizione e significato interpretativo per i dati INVALSI.
2. Quali comandi bisogna usare in SPSS per calcolare delle descrittive disaggregate per Macro-area?

Domande
Profilo CTER - C

Busta 12

1. La *concentrazione* in statistica con particolare riferimento alle prove INVALSI.
2. Quali tipi di ricodifica di variabili permette SPSS?

Domande
Profilo CTER - C

Busta 13

1. Che cosa s'intende per *fit* di un modello STATISTICO?
2. Descrivere le modalità conosciute per generare i grafici in SPSS ed esporre le differenze tra le predette modalità.

Domande
Profilo CTER - C

Busta 14

1. Che cosa s'intende per centratura sulla media di popolazione di una variabile?
2. Le tabelle personalizzate: modalità di creazione e potenzialità.

Domande
Profilo CTER - C

Busta 15

1. La Variabile V1 e la Variabile V2 sono entrambe quantitative. Quale tecnica si può usare per verificare l'esistenza di una relazione tra le due variabili?
2. Il comando di ricodifica automatica in SPSS: possibili utilizzi.

Domande
Profilo CTER - C

Busta 16

1. L'uso dei percentili nell'analisi di una distribuzione.
2. Quali comandi bisogna usare in SPSS per calcolare delle descrittive disaggregate per Regione?

Domande
Profilo CTER - C

Busta 1

1. Descrivere i possibili modi di creazione di variabili DUMMY in SPSS e gli eventuali motivi di utilizzo delle stesse.
2. Gli aspetti principali dell'Analisi fattoriale.

Domande
Profilo CTER - C

Busta 8

1. Gli aspetti principali dell'analisi multivariata a due livelli.
2. Cosa fa il comando "Identifica casi duplicati" in SPSS? Come funziona e a cosa serve?

Domande
Profilo CTER - C

Busta 11

1. L'intervallo di confidenza: definizione e significato interpretativo per i dati INVALSI.
2. Campione e peso in SPSS: come funziona e a cosa serve?

[Inglese C1](#)

This type of prediction modeling allows characteristics of persons (such as students) and groups (such as schools) to be included together to predict individual-level outcomes, while accounting for the clustering of individuals in groups and maintaining correct standard errors for testing the significance of the relationships (Raudenbush & Bryk, 2002).

[Inglese C3](#)

For each country and separately for reading, mathematics, and science, the total student variance is decomposed into the percentages due to differences between schools (i.e., the extent to which schools differ in the average achievement of their students) and the differences between students within the schools.

[Inglese C4](#)

According to the conceptual model for this study, student achievement should be higher in schools that are safe and orderly, have strong support for academic success, have adequate environment and resources, have a rigorous curriculum as evidenced by an early emphasis on reading skills, and where students are engaged in their reading, mathematics, and science lessons.

[Inglese C5](#)

On the basis of this model, the school-level correlations between each of these variables and student achievement should be positive and substantial in each country, because they represent the basic relationship between each school variable and average school achievement, without any statistical controls or adjustments.

[Inglese C6](#)

Among the School Environment variables, school-level correlations were strongest for **Schools Support Academic Success**, with average correlations across countries of 0.34 to 0.35 for the three subjects. There was considerable variation within countries, however, with highest correlations in Botswana (0.61 to 0.62 across reading, mathematics, and science) and the lowest correlations in Italy (0.04 to 0.10).

[Inglese C7](#)

Correlations for **Schools are Safe and Orderly** were next highest, on average, ranging from 0.28 to 0.29 across the subjects, with the highest correlations in Australia (0.54 to 0.55) and the lowest in Poland (–0.07 to 0.14). Correlations were lower for the third School Environment variable, Adequate Environment and Resources, averaging 0.09 to 0.10 across countries.

[Inglese C8](#)

Of the 25 countries and eight benchmarking participants with comparable data spanning the 1995 or 1999 to 2011 period, nine countries and four benchmarking participants had increased achievement, eleven countries and two benchmarking participants had decreased achievement, and five countries and two benchmarking participants showed no difference.

[Inglese C9](#)

Interestingly, most countries were more successful in educating their students in one or two of the subjects than in the others, especially when it comes to educating substantial percentages of students to high levels. For example, among the five countries with the highest percentages of students reaching the High International Benchmark, the three East Asian countries had a particular strength in mathematics.

[Inglese C12](#)

At the fourth grade, boys had higher achievement in number than girls in 22 countries and five benchmarking entities, compared to only four countries where girls outperformed boys. Boys had higher achievement in geometric shapes and measures than girls in nine countries and two benchmarking entities, compared with eight countries and one benchmarking entity where girls outperformed boys.

[Inglese C13](#)

Research consistently shows a strong positive relationship between achievement and socioeconomic status (SES), or indicators of socioeconomic status such as parents' or caregivers' level of education or occupation. TIMSS, PIRLS, and PISA have found strong positive relationships between level of parents' education and/or occupation and their children's educational attainment.

[Inglese C14](#)

In the TIMSS 2011 eighth grade assessment, students themselves reported on how often they speak the language of the test at home. For the eighth grade students, on average across countries, 79 percent always or almost always speak the language of the test at home, with 17 percent sometimes speaking it and 4 percent never speaking it.

[Inglese C15](#)

Students expecting a postgraduate degree had a 102-point advantage in average achievement compared to those expecting to go no further than upper secondary school, a full standard deviation on the TIMSS achievement scale (504 vs. 402). The results for the ninth grade and benchmarking participants were similar to the results at the eighth grade.

[Inglese C16](#)

On average, the eighth grade teachers were somewhat less experienced than their fourth grade counterparts (15 years vs. 17 years), leading to lesser percentages of students taught by experienced teachers—62 percent were taught by teachers with at least ten years of experience, compared to 70 percent of fourth grade students.

[Inglese C2](#)

The regression coefficients are in the metric of the TIMSS and PIRLS achievement scales, in which 100 scale score points corresponds approximately to one standard deviation within a country. The magnitude and direction of the regression coefficients in the models and the significance of the difference from zero indicate the relationship between each predictor and achievement, holding all else in the model constant.

[Inglese C10](#)

As shown in the report containing the TIMSS 2011 International Results in Mathematics (Mullis, Martin, Foy, & Arora, 2012), the average percent correct across the mathematics items overall was 50 percent, with 47 percent correct, on average, for the number items, 49 percent for the geometric shapes and measures items, and 58 percent for the data display items.

[Inglese C11](#)

Averaging mathematics achievement across countries, it is clear that there was little achievement difference between girls and boys (International Average: 490 vs. 491). Of the 50 countries at the fourth grade, 26 had no significant gender difference in mathematics achievement. Of the 24 remaining countries, 20 had small differences favoring boys, and four had relatively larger differences favoring girls.