



MULTI-COHORT INVESTIGATION INTO
LEARNING & EDUCATIONAL SUCCESS

Data Dictionary Collection Wave 2 (Data collected in June 2016)

[Cognitive Measures](#) (page 2)

[Self-Report Measures](#) (page 4)

[General Information and Socio-economic Status](#) (page 26)

Cognitive Measures

| COGNITIVE MEASURES WAVE 2 | | | | | | |
|-------------------------------|------------------------------|---------------|------------|--|---|--------|
| Measure | Category | Variable name | N of items | Description of measure | Reference | Waves: |
| Italian Vocabulary Test (IVT) | Cognitive test -- Vocabulary | bvocab | 35 | This is a reduced version of the test administered at WAVE 1. This version of the vocabulary test includes 35 items arranged depending on difficulty level. As with the longer version, participants are presented with a word in the Italian language, and are then asked to select a synonym of that word out of six options. Items in the longer version (which included 80 items) were selected on the basis of their frequency in the written Italian language. After the first collection wave the data from 1,100 participants were analysed and a reduced version of the Italian Vocabulary Test, including 35 items was created. Items were selected on the basis of their difficulty level (percentage of correct responses at wave 1, N = 1,100). If more than one item presented the same or a similar difficulty level, only one item was kept in the reduced version. Items were rearranged depending on difficulty level, starting with the easier items (from 'Debole' with 96.4% of correct responses and 'Sperare' with 94.9% of correct responses to 'Facezia' with 16.3% of correct answers and 'Sdrucire' with 14.7% of correct responses. This short version shows a perfectly normal distribution and correlates .958** with the longer version. The correlation between this short version and the Raven's test is .423** and with the Corsi block test is .20**. The test-retest correlation between the long vocabulary test at wave 1 and the short version at wave 2 is .652** (N = 421) with a break of 4 months. | Margherita Malanchini, Maddalena Malanchini, Nicholas Shakeshaft, Kerry Schofield, & Yulia Kovas (in preparation). The Italian Vocabulary Test: a self-administered test of verbal ability. | WAVE 2 |

| | | | | | | |
|---------------------------------------|----------------------|---|---|--|----------------|---------------------------|
| Self reported grades | Academic achievement | bsrgrades_ _qmaths (maths); bsrgrades_ _qita (literacy); bsrgrades_ _qforeignla ng (second language) | 3 | Participants are asked to report the grades that they obtained at the end of the academic year (June 2016) or if they did not know their grade, the grades that they were likely to receive. Participants reported their grades in three subjects: mathematics; literacy and foreign language. If they studied ore than one foreign language, they reported their grade in their first foreign language. Scores ranged from 4 (indicating a grade equivalent to 4 or less than 4) to 10 (indicating the highest possible grade). | Not applicable | EVERY COLLECTIO N WAVE |
| Self-report of years of school failed | Academic achievement | bsrgrades_ _qfailyear | 1 | Participants are asked to report whether they think they will fail this year or not. Their answer is either YES (coded in the database as "y") or NO (coded as "n") | Not applicable | EVERY COLLECTIO N WAVE |
| Teacher-reported grades | Academic achievement | In process | 3 | Grades in all subjects were provided by the teachers for the first and the second term. | Not applicable | EVERY COLLECTIO N WAVE |

Self-report measures

SELF-REPORT MEASURES WAVE 2

| Measure | Category | Variable name | N of items | Description of measure | Reference | Waves |
|---|----------------------------|---------------|------------|---|---|------------------|
| Academic self-concept and self-esteem scale | Non-cognitive/motivational | bselfcon | 11 | The measure assessed (1) academic self-concept (10 item scale, shortened from the 20-item scale developed by Burden (1998); and (2) Self-esteem with 1 item: 'I have high self-esteem'. Items are rated on a 5 point scale from 1 = not like me at all to 5 = very much like me. The 10 items assessing academic self-concept are: (1) I'm good at doing tests; (2) When I'm given new work to do, I usually feel confident I can do it; (3) I'm good at discussing things; (4) I need lots of help with my work; (5) I like having difficult work to do; (6) When I get stuck with my work I can usually work out what to do next (7) I'm not very good at solving problems; (8) I know the meaning of lots of words; (9) I find a lot of schoolwork difficult; (10) I'm clever. Item 11 assesses self-esteem: (11) 'I have high self-esteem'. | Adapted from: Burden (1998). Assessing children's perceptions of themselves as learners and problem solvers. School Psychology International, 19(4), 291-305. | WAVE1 and Wave 2 |
| Homework Scale | Non-cognitive/behavioural | bhomework | 5 | The measure asks participants to rate on a 4-point scale (1 = never to 4 = always), 5 statements about completing their homework. The items included are the following: 1) I complete my homework on time 2) I do my homework while watching television 3) My teachers grade my homework 4) My teachers make useful comments on my homework 5) I am given interesting homework | PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org. | WAVE 2 |

| | | | | | | |
|--|----------------------------------|----------------------------|---------------------------------------|--|--|------------------|
| Intrinsic and extrinsic motivation scale | Non-cognitive motivation | bintextmot | 8 (+ 1 quality control item = item 6) | The scale was taken directly from the INVALSI student questionnaire (www.invalsi.it), which is part of the OECD PISA assessment. The measure includes 8 items (4 assessing intrinsic and 4 assessing extrinsic motivation). The scale asks participants to rate on a scale from 1 = not at all to 4 = a lot, how much they agree with the following statements about them in school: (1) One of my objectives in school is to learn new things; (2) It is important to me to show others that I am a good student; (3) My objective in school is to learn as much as I can; (4) It is important to me to show others that I can do well in oral assessments; (5) One of my objectives in school is to understand what I am studying; (7) It is important to me to show others that I can do well in written assessments; (8) One of my objectives in school is to improve my abilities and competences; (9) It is important to me to appear smarter than my classmates. (ITEM 6 IS A QUALITY CONTROL ITEM). From PCA two clear factors emerged. Factor 1 (EXTRINSIC MOTIVATION) explained 36% of the variance and included items: 2,4,7,9. Factor 2 (INTRINSIC motivation) explained 30.2% of the variance and included items 1,3,5,and 8. | Invalsi student questionnaire (www.invalsi.it) | WAVE 1 and 2 |
| One-item Maths anxiety measure | Non-cognitive/emotion regulation | bmanx1it | 1 | The item asks participants to rate one a scale from 1 to 10 maths anxious do they feel. The exact wording is: 'On a scale from 1 (not anxious) to 10 (very anxious), how anxious are you about mathematics?' | Núñez-Peña et al. (2013). The Single-Item Math Anxiety Scale: An Alternative Way of Measuring Mathematical Anxiety. <i>Journal of Psychoeducational Assessment</i> , 20, 1-12. | WAVE1 and WAVE 2 |

| | | | | | | |
|---------------------------------------|----------------------------------|----------------------------|---|---|--|------------------|
| Time spent on mathematics | Non-cognitive/ environmental | btimemaths | 3 | <p>Participants are asked to rate how much time they have normally spent on a subject every week during the past academic year. The question asks: '<i>How much time did you typically spend per week studying mathematics?</i>' and specifies: '<i>An hour here refers to 60 minutes, not a class period.</i>'</p> <p>Scale from 1 to 5: 1 = No time; 2 = Less than two hours; 3 = two to four hours; 4 = four to six hours; 5 = six or more hours. Participants are asked to rate the time spent in the following three mathematics-related learning situation:</p> <ol style="list-style-type: none"> 1. Regular lessons in mathematics at my school 2. Out-of school-time lessons in mathematics 3. Study or homework in mathematics by myself | PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org . | WAVE 1 and 2 |
| Abbreviated Math Anxiety Scale (AMAS) | Non-cognitive/emotion regulation | bamas | 9 | <p>The AMAS assesses mathematics anxiety asking students to rate on a scale from 1 to 5, where 1 = not at all and 5 = very much, how anxious/nervous they feel in several maths-related contexts and activities. The 9 items are:</p> <ol style="list-style-type: none"> 1. Having to use the tables in the back of a maths book. 2. Thinking about an upcoming maths test 1 day before. 3. Watching a teacher work an algebraic equation on the blackboard. 4. Taking an examination in a maths course. 5. Being given a homework assignment of many difficult problems that is due the next class meeting. 6. Listening to a lecture in maths class. 7. Listening to another student explain a maths formula. 8. Being given a “pop” quiz in maths class. 9. Starting a new chapter in a maths book. | Hopkoet al. (2003). The abbreviated math anxiety scale (AMAS): Construction, validity, and reliability. <i>Assessment</i> , 10, 2, 178–182. doi: 10.1177/1073191103010002008 | WAVE1 and WAVE 2 |

| | | | | | | |
|---|----------------------------|--|------------------------|--|---|-------------------|
| Academic self-perceived ability (mathematics/ literacy/ L2) | Non-cognitive/motivational | bmspa (maths) /blitspa (literacy) /bl2spa (L2) | 9 (3 for each subject) | This measure of self-perceived ability assesses how good students think they are at specific abilities in 3 academic subjects: Mathematics, Literacy (Italian) and Foreign language (L2). Self-perceived ability (also known as self-efficacy) in each domain is assessed by asking each student: "How good do you think you are at" three subject-specific abilities. For mathematics the three abilities are: (1) Solving number and money problems; (2) Doing maths in your head; and (3) Multiplying and dividing. For literacy and L2 the three items are: (1) Reading; (2) Writing and (3) Grammar. Items are rated on a scale from 1 to 5, where 1 = not good at all and 5 = very good. | Spinath et al. (2006). Predicting school achievement from general cognitive ability, self-perceived ability, and intrinsic value. <i>Intelligence</i> , 34(4), 363–374. | WAVE 1 and WAVE 2 |
| Academic interest (mathematics/ literacy/ L2) | Non-cognitive/motivational | bminter (maths) / bitinter (literacy) / bal2int (L2) | 9 (3 for each subject) | The interest/enjoyment measure assesses how much students enjoyed specific abilities in 3 academic domains: Maths, Literacy (Italian) and L2. Interest/enjoyment is assessed by asking the student: "How much do you enjoy the following activities?" The items are the same as the ones included in the self-perceived ability measure. For mathematics: (1) solving number and money problems; (2) doing maths in your head; and (3) multiplying and dividing. For literacy and L2 the three items are: (1) Reading; (2) Writing and (3) Grammar. Items are rated on a scale from 1 to 5, where 1 = not like it at all and 5 = like it very much. | Spinath et al. (2006). Predicting school achievement from general cognitive ability, self-perceived ability, and intrinsic value. <i>Intelligence</i> , 34(4), 363–374. | WAVE1 and WAVE 2 |

| | | | | | | |
|-----------------------------------|-------------------------------|----------------------------|---------------------------------------|---|--|------------------|
| Mathematics classroom environment | Non-cognitive/ environmental | bmathsen v | 8 (+ 1 quality control item = item 5) | The measure has been adapted from the one collected at age 16 in TEDS and in the TCE project. Only the 4 highest loading items were kept for 2 factors: A) teacher-student relationship and B) competition/cooperation with classmates. The questionnaire asks students to think about their mathematics classroom during the past year, and rate on a scale from 1 to 4 how much the following statements are true: Factor A: (1) The teacher tries to make work interesting in this class; (2) The teacher shows an interest in every student's learning; (3) The teacher gives students an opportunity to express opinions; and (4) The teacher does a lot to help students. Factor B: (6) We help each other with our work; (7) Some pupils try to be the first ones to answer question the teacher asks; (8) Some pupils try to be the first ones to finish the class exercises; and (9) When we get reports we tell each other what grades we got. Items are rated on a 4-point scale (1 = never; 2 = some lessons; 3 = most lessons; 4 = every lesson). Item 5 = quality control item which should | Adapted from: Midgley, Eccles and Feldlaufer (1991). Classroom environment and the transition to junior high school. In Fraser and Walberg (eds) Educational environments: Evaluation, Antecedents and Consequences. Oxford: Pergamon Press. | WAVE1 and WAVE 2 |
| Time spent on literacy (Italian) | Non-cognitive / Environmental | btimeita | 3 | Participants are asked to rate how much time they have normally spent on a subject every week during the past academic year. The question asks: ' <i>How much time did you typically spend per week studying Italian?</i> ' and specifies: ' <i>An hour here refers to 60 minutes, not a class period.</i> ' Scale from 1 to 5: 1 = No time; 2 = Less than two hours; 3 = two to four hours; 4 = four to six hours; 5 = six or more hours. Participants are asked to rate the time spent in the following three literacy-related learning situation: 1. Regular lessons in Italian at my school 2. Out-of school-time lessons in Italian 3. Study or homework in Italian by myself | PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org . | WAVE 1 and 2 |

| | | | | | | |
|--------------------------------|----------------------------------|-------------------------|---|--|--|------------------|
| Literacy anxiety | Non-cognitive/emotion regulation | bitaanx | 6 | Participants are asked to rate on a scale from 1 to 5, how anxious and nervous do they feel in the following situations related to their Italian classroom: (1) The teacher is about to assess you in Italian; (2) You need to read out loud in Italian; (3) You are being assessed with a literacy composition/essay; (4) You start a new chapter in an Italian text book; (5) You have a written assessment/composition the following day; (6) You have a surprise literacy test during your Italian lesson. | Developed by MILES team | WAVE 1 and 2 |
| Literacy classroom environment | Non-cognitive/environmental | bitaenv | 8 | The measure has been adapted from the one collected at age 16 in TEDS and in the TCE project. Only the 4 highest loading items were kept for 2 factors: A) teacher-student relationship and B) competition/cooperation with classmates. The questionnaire asks students to think about their literacy (Italian) classroom during the past year, and rate on a scale from 1 to 4 how much the following statements are true: Factor A: (1) The teacher tries to make work interesting in this class; (2) The teacher shows an interest in every student's learning; (3) The teacher gives students an opportunity to express opinions; and (4) The teacher does a lot to help students. Factor B: (1) We help each other with our work; (2) Some pupils try to be the first ones to answer question the teacher asks; (3) Some pupils try to be the first ones to finish the class exercises; and (4) When we get reports we tell each others what grades we got. Items are rated on a 4-point scale (1 = never; 2 = some lessons; 3 = most lessons; 4 = every lesson). | Adapted from: Midgley, Eccles and Feldlaufer (1991). Classroom environment and the transition to junior high school. In Fraser and Walberg (eds) Educational environments: Evaluation, Antecedents and Consequences. Oxford: Pergamon Press. | WAVE1 and WAVE 2 |

| | | | | | | |
|-------------------------------------|------------------------------|---------|---|---|--|--------------|
| Time spent on Foreign Language (L2) | Non-cognitive/ Environmental | btime12 | 3 | <p>Participants are asked to rate how much time they have normally spent on a subject every week during the past academic year. The question asks: '<i>How much time did you typically spend per week studying foreign language?</i>' and specifies: '<i>An hour here refers to 60 minutes, not a class period.</i>' Students were instructed that if they studied more than one foreign language, they should have answered focusing on their first foreign language (information about which languages students were studying was also collected). The scale ranged from from 1 to 5: 1 = No time; 2 = Less than two hours; 3 = two to four hours; 4 = four to six hours; 5 = six or more hours. Participants are asked to rate the time spent in the three following second language-related learning situations:</p> <ol style="list-style-type: none"> 1. Regular lessons in foreign language at my school 2. Out-of school-time lessons in foreign language 3. Study or homework in foreign language by myself | PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org . | WAVE 1 and 2 |
|-------------------------------------|------------------------------|---------|---|---|--|--------------|

| | | | | | | |
|--|--------------------|--------|---|--|---|-----------------|
| Foreign Language (L2) anxiety (component of the Motivation for Learning a Second Language Questionnaire) | Emotion regulation | bl2anx | 7 | <p>The L2 anxiety scale includes 7 items. The scale is part of a longer measure assessing L2 motivation. Anxiety has emerged as a clear separate factor from L2 motivation in the Csizér & Kormos (2009) L2 questionnaire. This measure of L2 anxiety has good internal validity ($\alpha = .84$) and test-retest correlation ($r = .72$). The measure requires participants to rate on a 5-point scale (1 = not true at all to 5 = absolutely true). If participants are studying more than one foreign language, they are asked to think about their first foreign language when answering the questions. The 7 items are: (1). Even if I'm well prepared for the class, I feel anxious about it; (2). I would feel uneasy speaking the foreign language I study with/to a person who spoke that language; (3). I feel embarrassed to volunteer answers during my foreign language class; (4). I can get so nervous during my foreign language class that I forget the things I know; (5). I feel more tense and nervous in my foreign language class than in my other classes; (6). I get nervous when I'm speaking in my foreign language class; (7). I'm afraid that other students will laugh at me when I speak in my foreign language.</p> | Csizér, K., & Kormos, J. (2009). Modelling the role of intercultural contact in the motivation of learning English as a foreign language. <i>Applied Linguistics</i> , 30, 166-185. | WAVE1 and WAVE2 |
|--|--------------------|--------|---|--|---|-----------------|

| | | | | | | |
|---|--|---------|--|---|--|------------------|
| Foreign language classroom environment | Non-cognitive/ environmental | bl2env | 8 + 1 quality control item = item 6 | The measure has been adapted from the one collected at age 16 in TEDS and in the TCE project. Only the 4 highest loading items were kept for 2 factors: A) teacher-student relationship and B) competition/cooperation with classmates. The questionnaire asks students to think about their literacy (Italian) classroom during the past year, and rate on a scale from 1 to 4 how much the following statements are true: Factor A: (1) The teacher tries to make work interesting in this class; (2) The teacher shows an interest in every student's learning; (3) The teacher gives students an opportunity to express opinions; and (4) The teacher does a lot to help students. Factor B: (5) We help each other with our work; (7) Some pupils try to be the first ones to answer question the teacher asks; (8) Some pupils try to be the first ones to finish the class exercises; and (9) When we get reports we tell each other what grades we got. Items are rated on a 4-point scale (1 = never; 2 = some lessons; 3 = most lessons; 4 = every lesson). Item 6 = quality control item (to exclude from composite creation). | Adapted from: Midgley, Eccles and Feldlaufer (1991). Classroom environment and the transition to junior high school. In Fraser and Walberg (eds) Educational environments: Evaluation, Antecedents and Consequences. Oxford: Pergamon Press. | WAVE1 and WAVE 2 |
| Domain-Specific Impulsivity Scale for Children (DSIS-C) | Self-report measure/ executive functions | bimpuls | 6 | The questionnaire assesses impulsivity in the classroom with 6 items. Students are asked to rate whether statements apply to them on a 5-point scale (from almost never = 1 to at least once a day = 5). Items are: (1) I forgot something I needed for class; (2) I interrupted other students while they were talking; (3) I said something rude; (4) I couldn't find something because my desk, locker, or bedroom was messy; (5) I lost my temper at home or at school; (6) I did not remember what my teacher told me to do. [Full scale: 1 = almost never; 2 = about once a month; 3 = about 2/3 times a month; 4 = about once a week; 5 = at least once a day. | Adapted from: Tsukayama, E., Duckworth, A. L., & Kim, B. (2013). Domain-specific impulsivity in school aged children. Developmental Science 16(6), 879–893. | WAVE 2 |

| | | | | | | |
|---------------------|---|----------------------------------|---|--|---|--------|
| HOME CHAOS | Self-report/ home environmen t | bhomechaos | 6 | <p>Participants are asked to rate the following six statements about their home environment on the following three-point scale 1 = not true, 2 = quite true; 3 = very true.</p> <ol style="list-style-type: none"> 1. First thing in the day, we have a regular routine at home. R 2. You can't hear yourself think in our home. 3. It's a real „zoo“ in our home. 4. We are usually able to stay on top of things. R 5. There is usually a television turned on somewhere in our home. 6. The atmosphere in our house is calm. R | Matheny et al (1995). Bringing order out of chaos: Psychometric characteristics of the Confusion, Hubbub and Order Scale, Journal of Applied Developmental Psychology, 16, 429 - 444. | WAVE 2 |
| Parental Control | Self-report/ home environmen t | bparentalcontrol | 8 | <p>The scale asks participants to rate 8 statements about who makes most decisions at home on a 5-point scale. The exact wording is: 'In your family, how do you make most of the decisions about the following topics?' Scale: My parent(s) decide =5 /My parents decide after discussing it with me = 4 / We decide together = 3 / I decide after discussing it with my parents = 2 / I decide all by myself = 1.</p> <ol style="list-style-type: none"> 1. How late you can stay up on a school night 2. Which friends you can spend time with 3. Which after-school activities you take part in 4. Whether you can go out to meet friends 5. How you dress 6. What you do with your money 7. What you watch on TV or whether you watch TV at all 8. Whether you take part in religious training or education | From NICHD early childcare and youth development study | WAVE 2 |

| | | | | | | |
|---|--------------------------------------|---|--|---|---|---------------|
| <p>ECR-RS (Experiences in Close Relationship s— Relationship Structures) Questionnaire</p> | <p>Attachment /relationships</p> | <p>battachm (mother); battachf (father); battachfri e (friend); batachp (partner).</p> | <p>9 items x 4 = 36 items in total</p> | <p>The measure assesses the structure of close relationships with 4 main attachment figures: mother, father, good friend and partner. The scale has 2 factors: anxiety and avoidance. Items are rated on a 7-point scale (1= strongly disagree; 7 = strongly agree). The questionnaire asks participants to answer the following 9 questions: .</p> <ol style="list-style-type: none"> 1. It helps to turn to this person in times of need. 2. I usually discuss my problems and concerns with this person. 3. I talk things over with this person. 4. I find it easy to depend on this person. 5. I don't feel comfortable opening up to this person. 6. I prefer not to show this person how I feel deep down. 7. I often worry that this person doesn't really care for me. 8. I'm afraid that this person may abandon me. 9. I worry that this person won't care about me as much as I care about him or her. <p>The instructions for each of the 4 attachment figures are as follows:</p> <p>A. Please answer the following questions about your mother or a mother-like figure. B. Please answer the following questions about your father or a father-like figure. C. Please answer the following questions about your best friend D. Please answer the following questions about your partner. Note: If you are not currently in a relationship with someone, answer these questions with respect to a former partner or a relationship that you would like to have with someone.</p> | <p>Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). <i>Psychological Assessment</i>, 23, 615-625.</p> | <p>WAVE 2</p> |
|---|--------------------------------------|---|--|---|---|---------------|

| | | | | | | |
|-----------------------|---------------|-----------|----|---|---|--------|
| Romantic relationship | relationships | bromantic | 16 | <p>The first item asks participants whether they are currently in a relationship (coded in the database as 1 = Yes and 0 = No). If participants answered no, then they skip the following questions and move to the next questionnaire. If participants answered yes, then they are presented with the following 15 questions:</p> <p>A - Intimate self- disclosure (scale from 1 = never to 5 =very often) (1)“How often do you talk to your partner when something really great that happened?” (bromantic__backgroundPartnerGood); (2) “How often do you talk to your partner when something really bad that happened?” (bromantic__backgroundPartnerBad); (3) “How often do you talk to your partner about your private thoughts and feelings?” (bromantic__backgroundPartnerInt); B - Communication awkwardness (scale from 1 = never to 5 =very often) (4) "Sometimes I don't know quite what to say when I am with my partner" (bromantic__backgroundPartnerSay); (5) “I would be uncomfortable having intimate conversations with my partner” (bromantic__backgroundPartnerConv); (6) “Sometimes I find it hard to talk about my feelings with my partner” (bromantic__backgroundPartnerFeel); (7) “Sometimes I feel I need to watch what I say to my partner” (bromantic__backgroundPartnerContr); C - Passionate Love (scale from 1 = strongly disagree to 5 = strongly agree) (8) “I would rather be with my partner than anyone else” (bromantic__backgroundPartnerOther); (9) “I am very attracted tomy partner” (bromantic__backgroundPartnerAttr); (10) “My partner always seems to be on my mind” (bromantic__backgroundPartnerThoughts); (11) “The sight of my partner provokes strong emotions in me” (bromantic__backgroundPartnerEmotion); D - Influence (scale from 1 = never to 5 =very often) (12) “My partner often influences what I do” (bromantic__backgroundPartnerInflu); (13) “I sometimes do things because my partner is doing them” (bromantic__backgroundPartnerDo); (14) “I sometimes do things because I don't want to lose my partner's respect” (bromantic__backgroundPartnerRisp); (15) “My partner tries to change me” (bromantic__backgroundPartnerChange)</p> | Intimate self-disclosure scale: West & Zingle, 1969; Communication awkwardness scale (Powers & Hutchinson 1979); Passionate Love scale (Hatfield & Sprecher 1986); Influence Scale (Giordano, Cernkovich & Pugh, 1986). | WAVE 2 |
|-----------------------|---------------|-----------|----|---|---|--------|

| | | | | | | |
|------------|-------------------------|-------------|----|--|--|--------|
| Creativity | Self-report personality | bcreativity | 17 | <p>Participants are asked to answer 17 questions about creative behaviour (the first factor of the ideational Behaviour Scale) on a scale from 1 = never to 5 = very often. The items presented are as follows:</p> <ul style="list-style-type: none"> (1) I have many wild ideas (Note: '<i>wild ideas</i>' was translated as '<i>innovative ideas</i>' into Italian). (2) I think about ideas more often than most people. (3) I often get excited by my own new ideas. (4) I come up with a lot of ideas or solutions to problems. (5) I come up with an idea or solution other people have never thought of. (6) I like to play around with ideas for the fun of it. (7) It is important to be able to think of bizarre and wild possibilities. (8) I would rate myself highly in being able to come up with ideas. (9) I have always been an active thinker—I have lots of ideas. (10) I enjoy having leeway in the things I do and room to make up my own mind. (11) I would take a college course which was based on original ideas. (12) I am able to think about things intensely for many hours. (13) I try to exercise my mind by thinking things through. (14) I am able to think up answers to problems that haven't already been figured out. (15) I am good at combining ideas in ways that others have not tried. (16) Friends ask me to help them think of ideas and solutions. (17) I have ideas about new inventions or about how to improve things. | <p>Runco, M.A., Plucker, J.A. & Lim, W. (2001). Development and Psychometric Integrity of a Measure of Ideational Behavior. <i>Creativity Research Journal</i>, 13(3), 393-400. Only the first factor of the scale was included as we felt the second factor would not be applicable to the age group.</p> | WAVE 2 |
|------------|-------------------------|-------------|----|--|--|--------|

| | | | | | | |
|--------------------------------|-------------|------|----|---|--|--------|
| BFI-10 (Big Five Inventory) | Personality | bbig | 10 | <p>The measure is a 10 item short version of the Big 5 questionnaire and it has been widely used and validated into Italian (see reference section). <i>The Instructions ask participants: 'How well do the following statements describe your personality? I see myself as someone who.'</i></p> <ol style="list-style-type: none"> 1. Is reserved R 2. Is generally trusting 3. Tends to be lazy R 4. Is relaxed, handles stress well 5. Has few artistic interests R 6. Is outgoing, sociable 7. Tends to find fault with others R 8. Does a thorough job 9. Gets nervous easily R 10. Has an active imagination <p>Each item is rated on the following scale: 1= strongly disagree; 2 = disagree a little; 3 = neither agree nor disagree; 4 = agree a little; 5 = strongly agree.</p> <p>Scoring: Agreeableness: items 2 and 7(R); Conscientiousness: items 3 (R) and 8; Emotional stability: items 4 and 9 (R); Extraversion: items 1(R) and 6; Openness: items 5 (R) and 10.</p> | <p>Rammstedt, & John (2007). Measuring Personality in One Minute or Less: A 10-Item Short Version of the Big Five Inventory in English and German. <i>Journal of Research in Personality</i> 41, 203–12.</p> <p>Guido et al. (2015). An Italian version of the 10-item Big Five Inventory: An application to hedonic and utilitarian shopping values. <i>Personality and Individual Differences</i> 76, 135–140.</p> | WAVE 2 |
|--------------------------------|-------------|------|----|---|--|--------|

| | | | | | | |
|--|--------------------|---------|---------------------------------------|---|---|------------------|
| Narcissism (Narcissism subscale of the dark triad) | personality | bnarcis | 9 | <p>Participants are asked to rate how much they agreed or disagreed with 9 statements on a scale from 1 = strongly disagree to 5 = strongly agree. The items are the following:</p> <ol style="list-style-type: none"> 1. People see me as a natural leader. 2. I hate being the centre of attention. (R) 3. Many group activities tend to be dull without me. 4. I know that I am special because everyone keeps telling me so. 5. I like to get acquainted with important people. 6. I feel embarrassed if someone compliments me. (R) 7. I have been compared to famous people. 8. I am an average person. (R) 9. I insist on getting the respect I deserve. | Paulhus, D. L. (2013) . Dark Triad of Personality (D3-Short) . Measurement Instrument Database for the Social Science. Retrieved from www.midss.ie | WAVE1 and WAVE 2 |
| General Anxiety Disorder (GAD-7) Scale | Emotion regulation | bgad | 7 (+ 1 quality control item = item 7) | <p>The scale asks participants to rate on a scale from 1 to 4 (1 = not at all, 2 = several days; 3 = more than half the days; 4 = nearly every day), how often during the past two weeks they have been bothered by a number of problems. Items are: (1): feeling nervous anxious or on edge; (2) cannot stop or control worrying; (3) worrying too much about different things; (4) trouble relaxing; (5) being so restless it is hard to sit still; (6) becoming easily annoyed or irritable; (7) Quality control item; (8) feeling afraid as something awful might happen.</p> | Löwe, B., et al. (2008). Validation and Standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the General Population. Med Care, 46(3), 266 - 274. | WAVE1 and WAVE 2 |

| | | | | | | |
|--------------------------------|---------------|------|----|--|--|-------------------------|
| Mental Toughness Questionnaire | Non-cognitive | bmtq | 16 | <p>The version of the mental toughness questionnaire used in MILES is a reduced version including 18 items. Participants are asked to rate on a scale from 1 = strongly disagree to 5 = strongly agree. The items are the following:</p> <ol style="list-style-type: none"> 1) Even when under considerable pressure I usually remain calm 2) I tend to worry about things well before they actually happen (R) 3) I usually find it hard to summon enthusiasm for the tasks I have to do (R) 4) I generally cope well with any problems that occur 5) I generally feel that I am a worthwhile person 6) "I just don't know where to begin" is a feeling I usually have when presented with several things to do at once (R) 7) I usually speak my mind when I have something to say 8) When I make mistakes I usually let it worry me for days after (R) 9) In discussions, I tend to back-down even when I feel strongly about something (R) 10) I generally feel in control 11) I often wish my life was more predictable (R) 12) When I am feeling tired I find it difficult to get going (R) 13) I am generally able to react quickly when something unexpected happens 14) However bad things are, I usually feel they will work out positively in the end 15) I generally look on the bright side of life 16) I generally find it hard to relax (R) | <p>Levy, A. R., Polman, R. C., Clough, P. J., Marchant, D. C., & Earle, K. (2006). Mental toughness as a determinant of beliefs, pain, and adherence in sport injury rehabilitation. <i>Journal of Sports Rehabilitation</i>, 15, 246-254.</p> | <p>WAVE1 and WAVE 2</p> |
|--------------------------------|---------------|------|----|--|--|-------------------------|

| | | | | | | |
|-------------------|----------------------|----------|---|--|---|--------|
| Alcohol use Scale | Health and Wellbeing | balcohol | 6 | <p>Participants are asked to answer the following questions about their alcohol consumption: •</p> <p>(1) Have you ever drunk alcohol? (Coded in the database as 1 = yes and 0 = no) (Variable name: balcohol__backgroundEverdrank) those students who answered no skipped the following questions and were taken directly to the next questionnaire. Those who answered 'yes' were presented with the following 5 questions:</p> <p>(2, 3, 4) Think back over the last 30 days. How many full drinks (if any) of the following types of alcohol have you had?</p> <ul style="list-style-type: none"> • Beer, lager (variable name: balcohol__backgroundBeer) • Wine (balcohol__backgroundWine) • Spirits (include spirits mixedwith soft drinks) (balcohol__backgroundSpirits) <p>[Scale: 0 (coded as '0'), 1-2 (coded as '1') / 3-5 (coded as '2') / 6-9(coded as '3') /10-19 (coded a '4') /20-39 (coded as '5')]</p> <p>(5) How often do you have a drink containing alcohol? (balcohol__backgroundHowoften)</p> <p>[Scale: Never (coded as '0') / Monthly or less 2-4 times a month (coded as '1') / 2-3 times a week (coded as '2') / 4 or more times a week (coded as '3')]</p> <p>(6) How many drinks do you drink on a typical day when you are drinking? (balcohol__backgroundHowmany)</p> <p>[Scale: 1 or 2(coded as '1') / 3 or 4 (coded as '2') /5 or 6 (coded as '3') /7,8 or 9 (coded as '4') /10 or more (coded as '5')].</p> | Adapted from ALSPAC 'Life of a 16+ Teenager' questionnaire. | WAVE 2 |
|-------------------|----------------------|----------|---|--|---|--------|

| | | | | | | |
|-------------------|----------------------|-------|---|--|---|--------|
| Tobacco use scale | Health and Wellbeing | bsmok | 8 | <p>The scale asks 8 questions about smoking behaviour. Some are yes/no questions whereas some others are rated on a scale. The questions asked are the following:</p> <p>(1) Have you ever smoked a cigarette (including roll-ups)? (Coded in the database as 1 = yes and 0 = no) (variable name: bsmok__backgroundEversmok) those students who answered no skipped the following questions and were taken directly to the next questionnaire. Those who answered 'yes' were presented with the following 7 questions:</p> <p>(2) How many cigarettes have you smoked, in total, in your lifetime? (bsmok__backgroundLifecig) [Scale: Less than 5 (coded as '1') / 5-19 (coded as '2') /20-49 (coded as '3') /50-99 (coded as '4') /100 or more (coded as '5')]</p> <p>(3) How old were you when you first smoked a cigarette? (bsmok__backgroundHowold) [Open answer allowed a maximum length of 2 digits]</p> <p>(4) Have you smoked any cigarettes in the last 12 months? (bsmok__backgroundDaycig) [coded as YES = 1 /NO = 0] if participants answered 'no' they were discontinued and redirected to the following questionnaire, if they answered 'yes', they were asked the following 3 questions:</p> <p>(5) Do you smoke every week? (bsmok__backgroundWeekcig) [coded as YES = 1 /NO = 0] if participants answered 'no' they were redirected to the following questionnaire, if they answered 'yes', they were asked the following questions:</p> <p>(6) If you smoke every week, how many cigarettes do you smoke on average per week? (bsmok__backgroundCigweek) [Free answer, maximum space allowed 3 digits]</p> <p>(7) Do you smoke every day? (bsmok__backgroundDays) [Coded as YES = 1 /NO = 0] if participants answered 'no' they were redirected to the following questionnaire, if they answered 'yes', they were asked the following question:</p> <p>(8)If you smoke every day, how many cigarettes do you smoke on average a day? (bsmok__backgroundCigday) [Free answer, maximum space allowed 3 digits].</p> | Adapted from ALSPAC 'Life of a 16+ Teenager' questionnaire. | WAVE 2 |
|-------------------|----------------------|-------|---|--|---|--------|

| | | | | | | |
|---|-----------------------------|-----------------------------------|-----------|--|---|---------------|
| <p>The Adolescent Sleep-Wake Scale (ASWS)</p> | <p>Health and Wellbeing</p> | <p>bsleepwake</p> | <p>12</p> | <p>Participants were presented with a reduced version of the Adolescent Sleep-Wake Scale, which in its original form includes 28 items. Respondents are asked to indicate how often sleep behaviours have occurred during the past month using a 5-point scale (1 = never; 2 = almost never; 3 = sometimes; 4 = fairly often; 5 = very often). This reduced version includes 12 items and was derived from the results of the MILES pilot study (November 2015). The reduced version includes the following 12 items:</p> <ol style="list-style-type: none"> 1. When it's time to go to bed, I want to stay up and do other things (for example: watch television, play video games, talk on the phone). 2. I am ready to go to bed at bedtime. R 3. I try to "put off" or delay going to bed. 4. When it's time to go to sleep (lights-out), I lie down but then get up and come out of the bedroom. 5. I have trouble going to sleep. 6. I need help getting to sleep (for example: I need to listen to music, watch television, take medication, or have someone else in the bed with me). 7. During the night, I toss and turn in my bed. 8. During the night, I am very restless. 9. During the night, my legs kick or jerk. 10. During the night, I wake up several times 11. I sleep soundly through the night. R 12. After waking up during the night, I have trouble going back to sleep. | <p>Adapted from: LeBourgeois, M. K., Giannotti, F., Cortesi, F., Wolfson, A. R., & Harsh, J. (2005). The relationship between reported sleep quality and sleep hygiene in Italian and American adolescents. <i>Pediatrics</i>, 115 (Supplement 1), 257-265.</p> | <p>WAVE 2</p> |
|---|-----------------------------|-----------------------------------|-----------|--|---|---------------|

| | | | | | | |
|---------------------------------------|-----------------------------------|--|----|---|-----------------------------|--------|
| Career aspirations and choices PART 1 | Self-report goals and aspirations | bcareeron e | 13 | <p>Participants are asked to think about their career aspirations for the future and to rate on a scale from 1 to 5 (1 = not interested, 5 = very interested) how interested they would be in the following different professions:</p> <ol style="list-style-type: none"> 1. Be a doctor or work in medicine. 2. Work in science. 3. Work in engineering. 4. Be an inventor. 5. Run or work in business. 6. Work in sports or be a professional athlete. 7. Work in the arts or be an artist, musician, actor or dancer. 8. Be a teacher or work with children. 9. Be a lawyer. 10. Be a designer. 11. Work in hair and/or beauty. 12. Work in a trade (e.g. electrician, plumber, builder). 13. Be a celebrity. | Developed by the MILES team | WAVE 2 |
| Career aspirations and choices PART 2 | Self-report goals and aspirations | bcareertw o | 2 | <p>Participants are asked to answer two questions in this section of the career aspirations questionnaire: (1) Which job would you like to do as a grown up? (bcareertwo__backgroundjob) This question allowed an open text answer. (2) Does anyone in your family work as a scientist or engineer or in a job related? (bcareertwo__backgroundfamstem) [1 = yes; 2 = no; 3 = I don't know].</p> | Developed by the MILES team | WAVE 2 |

| | | | | | | |
|--|-----------------------------------|-----------------------------------|---|--|-----------------------------|--------|
| Career aspirations and choices PART 3 | Self-report goals and aspirations | bcareerthee__fam | 7 | <p>Participants were asked to rate on a scale from 1 to 5 (1 = strongly disagree to 5 = strongly agree) how much they agreed with the following 7 statements about their family:</p> <p>They expect me to go to university. They know how well I am doing in school. My parents/carers think science is interesting. My parents/carers think maths is interesting. My parents/carers think it is important for me to learn science. My parents/carers think it is important for me to learn maths. My parents/carers would be happy if I became a scientist or engineer.</p> | Developed by the MILES team | WAVE 2 |
| Career aspirations and choices PART 4 | Self-report goals and aspirations | bcareerfour__frie | 9 | <p>Students are asked to rate the following statements about their friends and science. The questionnaire asked: How many of your friends...</p> <ol style="list-style-type: none"> 1. Like science? 2. Like maths? 3. Encourage you to do well in school? 4. Get good marks in science? 5. Get good marks in maths? 6. Are brainy? 7. Care about their marks in school? 8. Think science is cool? 9. Think maths is cool? <p>[Scale: 1 = nobody, 2 = a few, 3 = some, 4 = many, 5 = very many.]</p> | Developed by the MILES team | WAVE 2 |

| | | | | | | |
|---------------------------------------|-----------------------------------|--------------------|---|---|-----------------------------|--------|
| Career aspirations and choices PART 5 | Self-report goals and aspirations | bcareerfive__teach | 8 | <p>Students are asked to rate the following statements about their teachers and scientific disciplines. The questionnaire asked: 'Your teachers and science. <i>How much do you agree with the following statements?</i>' Participants had to rate on a scale from 1 to 5 (1 = strongly disagree to 5 = strongly agree + another option stating: 'I don't study this subject coded in the database as '0').</p> <p>My biology teacher thinks I am good at biology. My chemistry teacher thinks I am good at chemistry. My physics teacher thinks I am good at physics. My maths teacher thinks I am good at maths. I like my biology teacher. I like my chemistry teacher. I like my physics teacher. I like my maths teacher.</p> | Developed by the MILES team | WAVE 2 |
|---------------------------------------|-----------------------------------|--------------------|---|---|-----------------------------|--------|

General Information

| GENERAL INFORMATION WAVE 2 | | | | | | |
|----------------------------|---------------------|---|------------|---|---|-------------------|
| Measure | Category | Variable name | N of items | Description of measure | Reference | Waves |
| Age in years | general information | bginfo__backgroundage | 1 | Participants are also asked for their age in years, for example 15 | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |
| Sex | general information | bginfo__backgroundsex | 1 | Participants are asked about their sex at birth, and the sex is recorded in the main database as "f" for females and "m" for males. | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |
| Nationality | general information | bginfo__backgroundnationality | 1 | Students are asked about their nationality with the following question: "Where were you born?" and students had to select one option from a dropdown menu: (a) Italy (coded in the database as "Ita"); (b) another Country in the European Union (coded as "Eu"); (c) another European Country NOT in the European Union (coded as "EuroNotEu"); and (d) another Country (coded as "other"). | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |
| Mother's nationality | general information | bginfo__backgroundnationalitymum | 1 | Students are asked about their mother's nationality with the following question: "Where was your mum born?" and students had to select one option from the following dropdown menu: (a) Italy (coded in the database as "Ita"); (b) another Country in the European Union (coded as "Eu"); (c) another European Country NOT in the European Union (coded as "EuroNotEu"); and (d) another Country (coded as "other"). | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |

| | | | | | | |
|------------------------------------|---------------------|-------------------------------------|---|--|--|-------------------|
| Father's nationality | General information | bginfo__backgroundnationaldad | 1 | Students are asked about their father's nationality with the following question: "Where was your dad born?" and students had to select one option from the following dropdown menu: (a) Italy (coded in the database as "Ita"); (b) another Country in the European Union (coded as "Eu"); (c) another European Country NOT in the European Union (coded as "EuroNotEu"); and (d) another Country (coded as "other"). | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |
| Age when moved to Italy | General information | bginfo__backgroundageita | 1 | Those students who were not born in Italy are asked to report how old they were when they moved to Italy by selection one of the following options: (a) born in Italy (coded as 0); (b) aged 0-3 (coded as 0-3); (c) aged 4-6 (coded as 4-9); (d) aged 7-9 (coded as 7-9) (e) aged 10-12 (coded as 10-12); (f) aged 13-15 (coded as 13-15); (g) 16 or older (coded as 16). | Taken from the INVALSI test questionnaire | WAVE 1 and WAVE 2 |
| Main language spoken at home | General information | bginfo__backgroundlanguagehome | 1 | Students were asked to report the main language they spoke at home choosing from the following option in a dropdown menu: (a) Italian (coded in the original database as "Ita") (b) another language (coded in the original database as "otherlang"). | Taken from the INVALSI test questionnaire PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org . | WAVE 1 and WAVE 2 |
| Main other language spoken at home | General information | bginfo__backgroundotherlanguagehome | 1 | Students were asked to report which other main language they spoke at home but if they spoke Italian as the main one, they were asked to skip this question. Participants could select from the following dropdown menu: (a) English (coded in the database as "English"), (b) Chinese (coded in the database as "Chinese"); (c) Another European language (coded as "OtherEULang"); (d) another Asian Language (coded as "OtherASIALang"); (e) Dialect (coded as "Dialect"); and (f) Another language (coded as "other"). | Taken from the INVALSI test questionnaire PISA (OECD Programme for International Student Assessment): www.pisa.oecd.org . | WAVE 1 and WAVE 2 |
| Siblings | General information | bginfo__backgroundsibs | 1 | Students were asked whether they were an only child and could select YES (coded in the database as "y") and NO (coded as "n"). If they had no siblings they were asked to skip the following questions about brothers and sisters. | Developed by MILES team | WAVE 1 and WAVE 2 |

| | | | | | | |
|-------------------|---------------------|-------------------------------|---|---|-------------------------|-------------------|
| How many sisters | General information | bginfo__backgroundsisters | 1 | Participants were asked: If not an only child, how many sisters do you have? The could choose between zero (coded as 0); one (coded as 1); two (coded as 2); or three or more (coded as 3) | Developed by MILES team | WAVE 1 and WAVE 2 |
| How old sisters | General information | bginfo__backgroundsistersage | 1 | If they had sisters, participants were asked to report whether their sisters are (a) older than they are coded as "older"; (b) younger than they are (coded as "younger"); and c) both older and younger than they are (coded as "olderandyounger") | Developed by MILES team | WAVE 1 and WAVE 2 |
| How many brothers | General information | bginfo__backgroundbrothers | 1 | Participants were asked: If not an only child, how many brothers do you have? The could choose between zero (coded as 0); one (coded as 1); two (coded as 2); or three or more (coded as 3) | Developed by MILES team | WAVE 1 and WAVE 2 |
| How old brothers | General information | bginfo__backgroundbrothersage | 1 | If they had brothers, participants were asked to report whether their brothers are (a) older than they are coded as "older"; (b) younger than they are (coded as "younger"); and c) both older and younger than they are (coded as "olderandyounger") | Developed by MILES team | WAVE 1 and WAVE 2 |