Multiple Intelligences Profiling Questionnaire

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CHAPTER 1

MULTIPLE INTELLIGENCES PROFILING QUESTIONNAIRE

INTRODUCTION

The Multiple Intelligences Profiling Questionnaire VII (MIPQ VII, see Tirri & Komulainen, 2002; Tirri, Nokelainen & Ubani, 2006; Tirri & Nokelainen, 2007) is a five-point Likert scale (Likert, 1932) self-rating questionnaire that is based on Howard Gardner's Multiple Intelligences (MI) theory (1983, 1991, 1995, 1999, 2000, 2006). The MIPQ VII aim to assist both learners in their self-reflection and teachers to understand their students' strengths. This version of MIPQ (Tirri, K., Komulainen, Nokelainen & Tirri, H., 2002, 2003) operationalizes seven MI dimensions with 28 items: (1) Linguistic, (2) Logical-mathematical, (3) Musical, (4) Spatial, (5) Bodily-kinesthetic, (6) Interpersonal and (7) Intrapersonal intelligence. The following two chapters present MIPQ versions VIII (with spiritual dimension) and IX (with spiritual and environmental dimensions).

Sternberg (1991) identifies Gardner's MI theory as a systemic approach similar to his own triarchic theory (1985). Although he appreciates Gardner's assessments on a theoretical level, he finds them to be a psychometric nightmare (Sternberg, 1991): the greatest challenge for advocates of Gardner's approach is to demonstrate the psychometric soundness of the instrument. Sternberg call for hard data showing that the theory works operationally in a way that will satisfy researchers as well as teachers.

The main goals of this chapter are, firstly, to present the seven dimension version of the Multiple Intelligences Profiling Questionnaire (MIPQ VII) and secondly, to test the psychometric properties of the MIPQ VII with empirical samples.

The chapter is organized as follows: First, we present the theoretical structure of the MIPQ VII. Second, we test the psychometric properties of the MIPQ VII's seven dimensions with two sub-samples consisting of Finnish preadolescents and adults (N = 410). Finally, we discuss the properties and possible uses of the instrument.

THEORETICAL FRAMEWORK

Gardner's theory of multiple intelligences builds upon a concept of an "intelligence", which he defines as "the ability to solve problems, or to create products, that are valued within one or more cultural settings" (Gardner, 1993, p. x). In his latest work Howard Gardner (2006, p. 50) also views intelligences as

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"raw, biological potentials, which can be seen in pure form only in individuals who are, in the technical sense, freaks". He lists seven intelligences (IQ) that meet his criteria for intelligence. These intelligences are (1) Linguistic, (2) Logical-mathematical, (3) Musical, (4) Spatial, (5), Bodily-kinesthetic, (6) Interpersonal and (7) Intrapersonal (Gardner, 1983, p. xi). Operationalization and prevalidation of these dimensions was first carried out with an empirical sample (N = 256) of Finnish university students (Tirri et al., 2002, 2003).

Tirri and Komulainen (2002) operationalized the *Linguistic intelligence* dimension to include both verbal and written expressions. People whose intelligence profile includes a strong linguistic component would presumably give themselves high ratings on learning and entertaining themselves with words and verbal games. The factor score weights revealed that linguistic intelligence consists of two different components. The first, "Academic verbalness", measured self-perception in verbal learning ("Metaphors and vivid verbal expressions help me learn efficiently" and "At school, studies in my native language or social studies were easier for me than mathematics, physics and chemistry"). The other component of linguistic intelligence consisted of items that measured "Everyday verbalness". The highest loading variables included the following items "I am good at entertaining myself and others with wordplay and jokes" and "It is easy for me to play with word games, such as crossword puzzles"). The reliability of the scale was satisfactory (α = .64).

Logical-mathematical intelligence consisted of items that measured a person's perceptions of both their mathematical ability and logical thinking skills (Tirri & Komulainen, 2002). This intelligence also had two components. The highest loading items, "At school I was good at mathematics, physics or chemistry", "Mental arithmetic is easy for me", and "I am good at games and problem solving which require logical thinking", measured problem solving in academic contexts. The component was named "Academic problem solving". The other component, "Systematic and logical thinking", included items that measured analytical, logical and systematic thinking in general. The highest loading variables included the following items: "I tend to look for consistency, models and logical series in things", "I can easily measure, classify, analyze or calculate things", "I want to present things as logically as possible and to give reasons for them" and "I easily notice lapses of logic in other people's everyday speech or actions". The reliability of the scale was good (α = .76). (Tirri & Komulainen, 2002; Tirri et al., 2002, 2003.)

According to Tirri and her colleagues (2002, 2003), *Musical intelligence* was the most reliable and homogeneous of all the Gardnerian scales (Alpha .93). The ten items of the scale measured one's musical ability to hear and produce music. The highest loading variables were the items "When listening to music, I am able to discern instruments or recognize melodies" and "I notice immediately if a melody is out of tune".

Spatial intelligence measured a person's views of his or her abilities to visualize and work with multidimensional objects. This intelligence consisted of two components: one dealt with visual imaging and the other with spatial perception. The highest factor score weights on the component measuring visual imaging included the following items: "When I think, I can see clear visual images in my mind", "I am able to see objects or events that I would like to document on

camera or video", and "I'm good at drawing and designing various kinds of figures". The highest factor score weights measuring spatial perception included the items: "It is easy for me to conceptualize complex and multidimensional patterns", "I can easily imagine how a landscape looks from a bird's-eye view", and "At school, geometry and various kinds of assignments involving spatial perception were easier for me than solving equations". The reliability of the scale was satisfactory (α = .73). (Tirri & Komulainen, 2002.)

Bodily-kinesthetic intelligence was operationalized to include items measuring people's views of their abilities to work with hands and coordinating their bodies. This scale also consisted of two components. The "Handyman" component included the following items: "I am handy", "I was good at handicrafts at school" and "I can easily do something concrete with my hands (e.g. knitting and woodwork)". The other component was named "Body coordination", because it included items related to coordination skills. The following items had high scores on this component: "I am very good at tasks that require good coordination" and "I have good coordination". The reliability of the scale was satisfactory (α = .74). (Tirri & Komulainen, 2002.)

Interpersonal intelligence was the second most homogeneous of the Gardnerian scales (Alpha .82). The items measured a persons' perception of his or her ability in social relations. The highest factor weights were on the items "I make contact easily with other people" and "I get along easily with different types of people". (Tirri & Komulainen, 2002.)

Intrapersonal intelligence consisted of two components. The "Self-reflection" component measured people's views of their ability to reflect on important issues in life as well as deep psychological and philosophical issues. The highest scoring factor weights were on items "I regularly spend time reflecting on the important issues of life", "I like to read psychological or philosophical literature to increase my self-knowledge" and "I keep a diary or note down the events of my inner life". The other component "Self-knowledge", dealt with issues concerning individuals' ability to analyze themselves and the courage to express their own opinions. The highest scoring items were, "I am able to analyze my own motives and ways of action", "I have opinions of my own and dare to disagree with others", and "I can handle the emotions caused by serious setbacks". The reliability of the scale was satisfactory (α = .70). (Tirri & Komulainen, 2002.)

Gardner founds his MI theory upon neurological, evolutionary, and cross-cultural evidence (Gardner, 1983). In the first edition of his MI theory published nearly thirty years ago, Gardner adopted a very individualistic point of view in exploring various intelligences. In the latest edition of his MI theory, Gardner emphasizes more cultural and contextual factors in the development of the seven intelligences (Gardner, 1999). Gardner has retained the original seven intelligences presented earlier, but he acknowledges the possibility of adding new intelligences to the list. He has worked to include naturalistic, spiritual and existential intelligences in his list of multiple intelligences. The next following two chapters further discuss these additional intelligences and their operationalization into the MIPQ VIII and IX.

METHOD

Sample

The non-probability sample was collected with the 28 –item MIPQ VII in 2002-2003. The theoretical structure of the questionnaire was analyzed with a sample (*N* = 410) that consists of Finnish preadolescents (*n* = 183) and adults (*n* = 227). The youngest respondents were 183 Finnish elementary school 5th and 6th grade students. One hundred and four (56 %) were girls and 79 (44 %) were boys. Their age median was 12 years. The second group (*n* =227) represents Finnish adults, including 200 males and 24 females (gender information was missing from three respondents), with the age median of 26 years.

Multiple Intelligences Profiling Questionnaire VII (MIPQ VII)

The MIPQ VII measures seven dimensions of Gardner's MI theory: (1) Linguistic, (2) Logical-mathematical, (3) Musical, (4) Spatial, (5) Bodily-kinesthetic, (6) Interpersonal, and (7) Intrapersonal intelligence. The instrument consists of 28 items on a Likert scale from 1 (*totally disagree*) to 5 (*totally agree*). The psychometric properties of the dimensions were prevalidated in our earlier studies (Tirri & Komulainen, 2002; Tirri, K., Komulainen, Nokelainen & Tirri, H., 2002, 2003; Tirri, Nokelainen & Ubani, 2006; Tirri & Nokelainen, 2007). The total number of items was reduced from 70 to 28 items. (Table 1.)

Procedure

The sample was collected with a non-probability sampling. Each respondent was personally invited to complete a paper and pencil version of the questionnaire. Preadolescents and adults answered the questions with the same wordings. Participants were asked to use the Likert scale from 1 (*totally disagree*) to 5 (*totally agree*) to evaluate their attitude towards the statements measuring multiple intelligences.

Total population in Finland is 5.2 million. The country consists of five culturally and economically equal provinces: 1) Lapland (*N* = 187,777, 4 %), 2) Oulu (*N* = 457,345, 9 %), 3) Western Finland (*N* = 1,843,225, 35 %), 4) Eastern Finland (*N* = 584,974, 11 %) and 5) Southern Finland (*N* = 2,106,117, 41 %). The preadolescent sample (*n* = 183) was collected from two provinces, Western and Southern Finland in 2002-2003. The adult sample (*n* = 227) represented all the provinces and was collected in 2003.

Statistical Analyses

Statistical analyses were conducted in four phases. *First*, internal consistency of the MIPQ VII was tested with Cronbach's alpha (1970). In this study, we consider alpha levels of the reliability analysis against Nunnally's (1978, pp. 245-246) statement: "increasing reliabilities much beyond .80 is often wasteful of time and funds with the exception of applied settings where important decisions are made with respect to specific test scores." *Second*, correlations between the seven MIPQ

VII dimensions were analyzed with Spearman rho. The fixed level of Type I error was determined in advance to be $\alpha = .05$ in both second and third phases of the analyses. Kubinger, Rasch & Simeckova (2007) suggest that when testing a correlation coefficient's significance it is preferable to use H_0: $0 < \rho < \lambda$ instead of H_0: $\rho = 0$. In this study, we set the $\lambda = .3$. Further, according to Kubinger and his colleagues (id.), the magnitude of the dependency between two random variables can be interpreted by using the coefficient of determination (r^2), which represents "the per centage of the variance of one of two random variables which can be explained by a linear regression on the other variable" (id., p. 76). *Thirth*, the external validity of the nine MI scales was initially studied with confirmatory factor analysis for categorical indicators.

RESULTS

Reliability Analysis of the MIPQ VII

The first phase of the analysis investigates psychometric properties of the 28 - item MIPQ VII. Table 2 presents the factor structure and alpha loadings for the seven MI scales. The results were in parallel with the findings of our previous studies (Tirri & Komulainen, 2002; Tirri et al., 2002, 2003; Tirri, Nokelainen & Ubani, 2006): Musical and Interpersonal scales had the highest reliabilities ($\alpha = .88$ - .89), and Linguistic and Spatial scales had the lowest reliabilities ($\alpha = .53$ - .62). As discussed earlier, alpha depends on the dimensionality of the scale (one-dimensional vs. multidimensional); higher reliability is achieved with one-dimensional constructs. The second issue affecting reliability is that when the abstraction level of the concept increases, like with the spiritual intelligence, the invention on unambiguous propositions becomes more difficult.

Table 1. Linguistic, Logical-mathematical, Spatial, Bodily-kinesthetic, Musical, Interpersonal and Intrapersonal Intelligence Items in the MIPQ VII

		Preadol. (*n* = 183)	*Adults* (*n* = 227)
Item	*Label*	*M* (*SD*)	*M* (*SD*)
lingu_1	Writing is a natural way for me to express myself.	3.36(0.96)	2.72(1.15)
lingu_2	At school, studies in native language were easy for me.	3.10(1.23)	3.21(1.19)
lingu_3	I have recently written something that I am especially proud of, or for which I have received recognition.	2.93(1.29)	2.00(1.21)
lingu_4	Metaphors and vivid verbal expressions help me learn efficiently.	3.25(0.94)	3.52(1.01)
logic_1	At school, I was good at mathematics, physics or chemistry.	2.71(1.33)	2.72(1.13)
logic_2	I can work with and solve complex problems.	3.08(1.18)	3.54(0.89)
logic_3	Mental arithmetic is easy for me.	3.79(1.07)	3.51(1.01)
logic_4	I am good at games and problem solving, which require logical thinking.	3.43(1.19)	3.41(0.94)
spati_1	At school, geometry and various kinds of assignments involving spatial perception were easy for me.	2.88(1.13)	2.98(1.24)
spati_2	It is easy for me to conceptualize complex and multidimensional patterns.	3.28(0.98)	3.45(0.86)
spati_3	I can easily imagine how a landscape looks from a bird's-eye view.	3.50(1.04)	3.35(1.00)
spati_4	When I read, I form illustrative pictures or designs in my mind.	3.78(1.06)	3.52(1.08)
bodki_1	I am handy.	3.49(0.96)	3.92(0.93)
bodki_2	I can easily do something concrete with my hands (e.g. knitting and woodwork).	3.99(1.04)	4.03(1.04)
bodki_3	I am good at showing how to do something in practice.	3.28(0.89)	3.88(0.77)
bodki_4	I was good at handicrafts at school.	3.90(1.14)	4.04(1.00)
music_1	After hearing a tune once or twice I am able to sing or whistle it quite accurately.	3.28(1.23)	2.92(1.32)
music_2	When listening to music, I am able to discern instruments or recognize melodies.	3.34(1.15)	3.29(1.35)
music_3	I can easily keep the rhythm when drumming a melody.	3.29(1.06)	3.20(1.28)
music_4	I notice immediately if a melody is out of tune.	3.16(1.19)	3.08(1.29)
inter_1	Even in strange company, I easily find someone to talk to.	3.30(1.14)	3.84(0.89)
inter_2	I get alone easily with different types of people.	3.58(1.01)	4.26(0.75)
inter_3	I make contact easily with other people.	3.30(0.98)	3.84(0.77)
inter_4	In negotiations and group work, I am able to support the group to find a consensus.	3.26(0.85)	3.72(0.74)
intra_1	I am able to analyze my own motives and ways of action.	3.25(0.83)	3.86(0.77)
intra_2	I often think about my own feelings and sentiments and seek reasons for them.	3.39(1.10)	3.43(1.08)
intra_3	I spend time regularly reflecting on the important issues in life.	3.01(1.20)	2.88(1.12)
intra_4	I like to read psychological or philosophical literature to increase my self-knowledge.	2.23(1.11)	2.33(1.15)

Table 2. Factor Structure and Alpha Loadings of the MIPQ VII

		Preadolescents (*n* = 183)	*Adults* (*n* = 227)
Dimension	*Items*	α	α
1. Linguistic	lingu_1, lingu_2, lingu_3, lingu_4	.62	.59
2. Logical-mathematical	logic_1, logic_2, logic_3, logic_4	.76	.63
3. Musical	music_1, music_2, music_3, music_4	.83	.89
4. Spatial	spati_1, spati_2, spati_3, spati_4	.53	.54
5. Bodily-kinesthetic	bodki_1, bodki_2, bodki_3, bodki_4	.71	.84
6. Interpersonal	inter_1, inter_2, inter_3, inter_4	.81	.80
7. Intrapersonal	intra_1, intra_2, intra_3, intra_4	.72	.76

Correlational Analysis of the MIPQ VII

The second step in the analysis is to calculate Spearman non-parametric correlations between the seven MI dimensions with the preadolescent (n = 183) and adult (n = 227) samples (Table 3). The results show that Logical-mathematical intelligence is statistically related to the Spatial intelligence in both samples, $r_S(183) = .48$, $p < .01$, $r^2 = .23$ and $r_S(227) = .39$, $p < .01$, $r^2 = .15$ as both variables share 23 and 15 per cent mutual variance, respectively. Further, in both samples the Linguistic intelligence is more strongly related to Intrapersonal than Interpersonal intelligence, $r_S(183) = .49$, $p < .01$, $r^2 = .25$ and $r_S(227) = .52$, $p < .01$, $r^2 = .27$. However, both aforementioned dimensions correlate positively in both samples, $r_S(183) = .42$, $p < .01$, $r^2 = .18$ and $r_S(227) = .36$, $p < .01$, $r^2 = .13$.

We also investigated correlations between age, gender and the MI dimensions in the preadolescent sample. Results considering the MI scales showed that boys rated their Logical-mathematical intelligence higher than girls, $r_S(183) = .39$, $p < .01$, $r^2 = .15$. This result was also weakly present in our earlier study with the university students (Tirri & Komulainen, 2002), $r_S(256) = .27$, $p < .001$, $r^2 = .07$. Females tended to rate their linguistic abilities higher than the males in both current, $r_S(183) = -.18$, $p < .01$, $r^2 = .03$ and the past study (Tirri, et al., 2002), $r_S(256) = -.49$, $p < .001$, $r^2 = .25$.

Table 3. Correlations between the MIPQ VII Dimensions

Scale	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Preadolescents (n = 183)							
1. Linguistic	—	.15	.39	.45	.36	.34	.49
2. Logical-mathematical		—	.12	.48	.15	.26	.31
3. Musical			—	.39	.41	.50	.36
4. Spatial				—	.32	.31	.40
5. Bodily-kinesthetic					—	.44	.16
6. Interpersonal						—	.42
7. Intrapersonal							—
Adults (n = 227)							
1. Linguistic	—	.11	.15	.22	-.03	.28	.52
2. Logical-mathematical		—	.10	.39	.19	.04	.19
3. Musical			—	.27	.11	.24	.16
4. Spatial				—	.28	.21	.31
5. Bodily-kinesthetic					—	.11	-.09
6. Interpersonal						—	.36
7. Intrapersonal							—

Our earlier study (Tirri et al., 2002) validated the MI scales with various controlling variables. The results showed that those students who had received good grades in mathematics in their matriculation examination rated their Interpersonal skills to be lower than their colleagues who had received lower grades, $r(256) = -.22$, $p < .001$, $r^2 = .05$. Results also indicated that good grades in mother tongue in the matriculation examination explain students' high ratings in the Linguistic intelligence component, $r(256) = .34$, $p < .001$, $r^2 = .12$. In addition, we found that Linguistic intelligence seems to increase with age, $r(256) = .22$, $p < .001$, $r^2 = .05$, as the older students rated this component significantly higher than their younger colleagues. Results showed that the females tended to rate themselves higher than the males in both interpersonal, $r(256) = .29$, $p < .001$, $r^2 = .08$, and intrapersonal intelligence, $r(256) = .45$, $p < .001$, $r^2 = .20$. The first finding was repeated in the current study, but with a weak correlation, $r(183) = -.18$, $p < .05$, $r^2 = .03$.

Confirmatory Factor Analysis

The last phase of the statistical analysis was to evaluate the goodness-of-fit of the MIPQ VII model with both preadolescent and adult samples (Table 4). In addition, the model fit to the combined sample was investigated. The RMSEA estimate, as well as the upper bound of 90 per cent confidence interval, were in both samples

within the fair fit level of .05 – .08 (Hair et al., 1995). Incremental fit measures (TLI and CFI) were in both samples above the recommended level of .90 (Tucker & Lewis, 1973). Results of the combined sample (N = 378) also indicated good generalizability of the model.

Table 4. Goodness-of-fit Values of the MIPQ VII

	Preadolescents (n = 183)	*Adults* (n = 227)	*Combined* (N = 410)
Absolute Fit Measures			
χ^2	636.91	721.50	990.40
Df	329	329	329
p	<.001	<.001	<.001
RMSEA	.072	.073	.070
90 per cent C.I.	.063 .080	.065 .080	.065 .075
Incremental Fit Measures			
CFI	.977	.975	.977
TLI	.972	.969	.972

Note. RMSEA= Root Mean Square Error of Approximation with 90 per cent confidence interval. *TLI* = Tucker-Lewis coefficient. *CFI* = Comparative Fit Index.

We did not do any model modifications during the analysis as, according to Hu and Bentler (1995, p. 99), "… when procedures are used that empirically modify a model to make it look as good as possible in a particular sample, all of the model fit indexes will appear unduly optimistic about the quality of the model." However, we probed the model with two simple procedures. First, we randomly assigned the 28 items to the seven MI dimensions and calculated the fit indices for the combined data (N = 410). Results showed a dramatic change in goodness-of-fit measures. For example, CFI and TLI values dropped to .452 and .358, respectively. This is a theoretically justifiable finding as all the items are allowed to interact with each other and, thus, produce a high overall correlation. Second, we inputted a random data (within the original MIPQ VII value range from 1 to 5 into the CFA model. The analysis did not converge at all as the maximum number of iterations (first n = 1000 and then n = 10000) was exceeded.

CONCLUSIONS

In this chapter, we presented the seven dimension version of the Multiple Intelligences Profiling Questionnaire (MIPQ VII) that is based on Gardner's MI theory (e.g., 2006). Operationalization of the seven MI dimensions was tested with an empirical sample of Finnish preadolescents and adults (N = 410): Firstly, internal consistency of the MIPQ VII was tested; Secondly, correlations between the seven MIPQ VII dimensions were studied; Thirdly, correlations between the seven MIPQ VII dimensions and the background variables (age, gender) were

analyzed; Fourthly, the external validity of the seven MI dimensions was studied with a confirmatory factor analysis (CFA).

Results of the internal consistency analysis showed that the seven MIPQ VII dimensions had satisfactory reliability coefficients with both sub samples. The results of CFA showed good generalizability characteristics of the MIPQ VII scales. Combined sample (N = 410) did fit to the model better than the two sub samples, indicating good generalizability of the model.

Results of the MIPQ VII inter-scale correlation analysis showed that Logical-mathematical intelligence correlated positively with Spatial intelligence in both samples and Linguistic correlated positively with Intrapersonal intelligence.

Results of the correlation analysis between the gender, age and MIPQ VII scales showed that boys in the preadolescent sample rated their Logical-mathematical intelligence higher than girls. This finding is in accord with earlier studies concerning gender differences among gifted students. A study by Siegle and Reis (1998) found that adolescent male gifted students indicated they had higher ability than females in mathematics, science, and social studies. Females tended to rate their linguistic abilities higher than the males. The similar results have been reported with our earlier studies using this instrument with gifted preadolescents (Tirri & Ubani, 2007).

Earlier research on gender differences in mathematical achievement has shown that gifted girls tend to underestimate their abilities in this area and this trend could have influenced the self-rated behavior of the girls in our sample as well. Kerr (1994) and Reis (1998) have identified external barriers to gifted women to excel as including the attitudes of parents and school, environmental options and possible discrimination or harassment at school or at work. The possible internal barriers among gifted females included self-doubt, self-criticism, and too low expectations. According to Siegle and Reis (1998), gifted girls tend to underestimate their abilities, especially in mathematics, social studies and science.

DISCUSSION

Our major motivation, when operationalizing Gardner's MI theory into the MIPQ VII, is to provide both learners and their supervisors' practical tools for meaningful self-reflection regarding each one's potentials. Perceptions of individual strengths are also connected to self-concept (e.g., Shavelson, Hubner & Stanton, 1996) and attribution theory (e.g., Heider, 1958; Weiner, 1974).

In addition, we are interested in the outcome aspect that is strongly present in the MI theory suggesting that academic intelligence alone is not enough. We need to recognize that success in life and career depends also on social, practical and emotional intelligences (Albrecht, 2006; Goleman, 2006).

Our findings give important information to teachers and educators on how gender influences the self-perception of students' abilities. The educators and counsellors should be aware of the main trends of girls to rate themselves lower in logical-mathematical dimension than in the other ones. The girls should be encouraged to see their whole potential in that dimension as well.

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Multiple Intelligences Profiling Questionnaire VII

	TOTALLY DISAGREE				TOTALLY AGREE
Writing is a natural way for me to express myself.	1	2	3	4	5
At school, studies in English or social studies were easier for me than mathematics, physics and chemistry.	1	2	3	4	5
I have recently written something that I am especially proud of, or for which I have received recognition.	1	2	3	4	5
Metaphors and vivid verbal expressions help me learn efficiently.	1	2	3	4	5
At school, I was good at mathematics, physics or chemistry.	1	2	3	4	5
I can work with and solve complex problems.	1	2	3	4	5
Mental arithmetic is easy for me.	1	2	3	4	5
I am good at games and problem solving, which require logical thinking.	1	2	3	4	5
At school, geometry and other subjects involving spatial perception were easier for me than solving equations.	1	2	3	4	5
It is easy for me to conceptualize complex and multidimensional patterns.	1	2	3	4	5
I can easily imagine how a landscape looks from a bird's-eye view.	1	2	3	4	5
When I read, I form pictures or visual images in my mind.	1	2	3	4	5
I am handy.	1	2	3	4	5
I can easily do something concrete with my hands (e.g. knitting and woodwork).	1	2	3	4	5
I am good at showing someone how to do something in practice.	1	2	3	4	5
I was good at handicrafts (e.g. woodwork; textiles) at school.	1	2	3	4	5
After hearing a tune once or twice I am able to sing or whistle it quite accurately.	1	2	3	4	5
When listening to music, I am able to pick out individual instruments and recognize melodies.	1	2	3	4	5

	TOTALLY DISAGREE				TOTALLY AGREE
I can easily keep the rhythm when drumming a melody.	1	2	3	4	5
I notice immediately if a melody is out of tune.	1	2	3	4	5
Even in strange company, I can easily find someone to talk to.	1	2	3	4	5
I get along easily with different types of people.	1	2	3	4	5
I make contact easily with other people.	1	2	3	4	5
In negotiations and group work, I am able to support the group to find a consensus.	1	2	3	4	5
I am able to analyze my own motives and ways of action.	1	2	3	4	5
I often think about my own feelings and sentiments and seek reasons for them.	1	2	3	4	5
I regularly spend time reflecting on the important issues of life.	1	2	3	4	5
I like to read psychological or philosophical literature to increase my self-knowledge.	1	2	3	4	5

SPSS Syntax to Compute MIPQ VII Factors

```
/* Variable names in this syntax refer to Table 1 in this chapter

COMPUTE MIPQVII_LINGU = MEAN(lingu_1, lingu_2, lingu_3, lingu_4).
COMPUTE MIPQVII_LOGIC = MEAN(logic_1, logic_2, logic_3, logic_4).
COMPUTE MIPQVII_MUSIC = MEAN(music_1, music_2, music_3, music_4).
COMPUTE MIPQVII_SPATI = MEAN(spati_1, spati_2, spati_3, spati_4).
COMPUTE MIPQVII_BODKI = MEAN(bodki_1, bodki_2, bodki_3, bodki_4).
COMPUTE MIPQVII_INTER = MEAN(inter_1, inter_2, inter_3, inter_4).
COMPUTE MIPQVII_INTRA = MEAN(intra_1, intra_2, intra_3, intra_4).
EXECUTE.

VARIABLE LABELS
  MIPQVII_LINGU        "1. Linguistic"
  MIPQVII_LOGIC        "2. Mathematical-logical"
  MIPQVII_MUSIC        "3. Musical"
  MIPQVII_SPATI        "4. Spatial"
  MIPQVII_BODKI        "5. Bodily-Kinesthetic"
  MIPQVII_INTER        "6. Interpersonal"
  MIPQVII_INTRA        "7. Intrapersonal".
```