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Theoretical and methodological foundation of a self-perception scale on personal competencies and the cardinal virtues. An exploratory and pilot study

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ABSTRACT

The cardinal virtues (prudence, justice, fortitude, and temperance) have relevance within the areas of character education and integral or comprehensive formation. In recent years, there has been growing interest and a great deal of literature produced on character education and its measurement. In this paper, we propose a questionnaire (a Likert-type self-report scale of 22 items), the QCV, designed to measure competencies associated with the cardinal virtues. The theoretical foundation of the questionnaire lies in the Aristotelian-Thomistic tradition in dialogue with positive psychology. The paper also offers a review of the literature on the measurement of virtue and the principal instruments currently used to measure the cardinal virtues. The results of a preliminary application of the QCV with a sample of 325 university students indicate that the questionnaire, written in Spanish and conducted in Madrid, has good psychometric properties.

PLAIN LANGUAGE SUMMARY

This article contributes to the literature on moral development from both a theoretical and an empirical point of view. This study offers a preliminary well-founded instrument that contributes to the education of university students in competencies and virtues. Currently, there are no instruments that measure the competencies linked to cardinal virtues that are the core of the integral formation understood as comprehensive of the different dimensions of the person. Students can better know their competencies and virtues by applying this tool. Those responsible for educational policies at universities can use this questionnaire to identify which competencies and virtues are being developed in students. Society in general will benefit from promoting the highest virtues and values of its citizens.

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Introduction

Moral virtues are habits; internal and stable dispositions that allow an individual to act with goodness, and in so doing, perfect themselves (Aristotle 1985). There are four moral virtues, traditionally referred to as the cardinal virtues: prudence, justice, fortitude, and temperance. The term ‘cardinal’ is from Latin and refers to the axis or *cardum* which these virtues serve for the harmonious and full development of the person. Plato (ca. 380 B.C.E.; 1986) mentions these four virtues as the principal goal of education, the Greek *paideia* (Jaeger 1957). The presence of the cardinal virtues in the person can be considered a key indicator, and even the core of integral or comprehensive formation, not only as the basis of all other virtues but also that their exercise develops other human faculties: intelligence, will and affect (Crespi et al. 2021; Obispo Díaz et al. 2022).

Since the 1980’s, education in virtues has become a subject of growing interest and credibility within the social sciences, with renewed interest in philosophy of Aristotle and the subject of virtue (MacIntyre 1981). Within the field of psychology, there was a reconsideration and reinterpretation of the influential study by Hartshorne and May (1928), leading to the conclusion that there was a premature and unjustified disregard for virtue as an explanation of human behaviour (Peterson and Seligman 2004; Rushton 1984; Vitz 1990).

Today, character education has been embraced by educational institutions along with education in values, virtues, and competencies (Fernández and López 2022, 2023; López, Fernández, and Ortiz de Montellano 2023). Character education is understood as ‘as a subset of moral education, concerned with the cultivation of positive character traits called virtues’ (Arthur et al. 2016, 20). This article provides a theoretical and methodological foundation for the measurement of cardinal virtues through personal competencies. It then presents an instrument for the measurement of cardinal virtues (QCV) in university students, as well as an exploratory and pilot study.

Theoretical and methodological foundation

Cardinal virtue measurement

The effective evaluation of virtue is difficult due to the complexity of the construct (Wright, Warren, and Snow 2021). Positive psychology assumes that virtue is a complex phenomenon but can nevertheless be measured empirically. Virtue is a key construct of human behaviour that can be identified through certain indicators (Fowers 2014). This requires a prior definition and operationalisation of the concept of virtue, no easy task, given the conceptual heterogeneity of the subject among researchers attempting to define virtue. Every virtue is a concept with a multiplicity of interrelated meanings, an umbrella concept; or, inversely, a jingle fallacy, different constructs which have the same name, in part due to the diversity of cultures from which the study is approached (Wright et al. (2021).

Curren and Kotzee (2014) consider that the measurement of a virtuous act involves four interrelated components: perception, emotion, judgement, and motivation. Curzer (2014) speaks of sensibility, judgment, motivation, and character as the key components of any moral action. Morgan et al. (2017), based on the measurement of gratitude, also

consider four components (cognitive, affective, attitudinal/conative, and behavioural) which largely coincide with the former.

Measurement tools of self-perception using Likert-type items have been the most used instruments in the measurement of moral virtues (Ames, Serafim, and Martin 2022). The advantage of these tools is their relative simplicity to design and apply. Fowers (2014) is cautiously optimistic of the possibilities of measuring virtue using self-reporting tools provided these are applied by researchers using a range of methodological approaches and in a programmed manner over time.

The following are the three most referenced instruments or scales for the measurement of moral virtues, related to the cardinal virtues:

- The Virtues Scale (Cawley, Martin, and Johnson 2000) is an important tool to measure virtues consisting of 140 self-report items. The VS rejects the Kohlbergian tradition of stages of moral development and proposes a psychology of virtue understood as a personality trait. Factor analysis reveals four key factors: empathy, order, ingenuity, and serenity. It is possible to identify elements of the cardinal virtues in these factors. Furthermore, there is a correlation between the VS and the Big-Five Personality Traits (Costa and McCrae 1985), and some of these traits of this model can be considered as virtues.
- The Leadership Virtues Questionnaire (Riggio et al. 2010) is a self-perception scale of the cardinal virtues, associated with the exercise of leadership. This scale (LVQ) is easily applied, consisting of only 19 items. Although this scale theoretically measures four virtues, the factor structure does not distinguish four factors or virtues but rather explores a single construct that could be called virtuous leadership (Wright, Warren, and Snow 2021, 94).
- The VIA, Values in Action Inventory of Strengths (Peterson and Seligman 2004), is the most used questionnaire to measure virtue. The VIA considers six basic virtues (wisdom, courage, humanity, justice, temperance, and transcendence) to which 24-character strengths are associated. The full version of this self-report scale consists of 240 items. In many of the factor analyses that have been carried out, the factors do not correspond to the six virtues of the model (Geldhof et al. 2014, McDonald et al., 2008; McGrath 2015). The selection of the virtues was the result of a study of cultures and religions from around the world, and a review of the diverse classifications of virtues. It is important to note that four of the six basic virtues correspond to the four cardinal virtues. Interestingly, in the theoretical justification of their proposal, Peterson and Seligman (2004) make repeated references to Aristotle (mentioned 44 times). However, their concept of virtue differs significantly from that of Aristotle (Kristjánsson 2012, 2013).

For McGrath (2015), VIA measures the degree to which a person can control their behaviour in an appropriate manner (goodness) and their intellectual capacity to judge (inquisitiveness), which reflects the psychological nature of human beings rather than the nature of virtues. Wright et al., (2021) consider VIA problematic due to the design of the scales, as these fail to adequately consider the components of virtue and do not offer an adequate justification of how virtues are manifested or are interrelated.

Virtues and competencies

VIA (Peterson and Seligman 2004) assumes that virtue can be measured through character strengths. Virtue can be measured through competencies since they are similar to character strengths (Nucci, Narvaez, and Krettenauer 2014). Competence, according to Boyatzis (1982), is a set of knowledge, attitude, skills, and abilities that allow for individual excellence in the performance of a certain task or job. According to this definition, competencies lead to excellence in any task. The term ‘competence’ is not univocal; there are almost as many meanings as there are researchers and these differ and change according to the field of study: education, business, work, sports, etc.

Often the concept of competence is reduced to good performance. But in recent years the concept of personal competence has expanded, and some authors now suggest that the virtues of prudence, justice, fortitude, and temperance may be considered moral competencies (Morales-Sánchez and Cabello-Medina 2013). At the start of the 21st century, the *Tuning Project* proposes that personal competencies also encompass the capacity to know and understand how to act and to be (González and Wagenaar 2003). According to the concept of competence proposed by Tardif (2003), the person plans their actions in a manner which is analogous to moral choice, ethical action and the exercise of prudence within the Aristotelian tradition.

Thus, personal competence and virtue are closely related concepts. According to Crespí (2021), personal competencies are ‘the dynamic set of knowledge, skills or abilities (how to do), attitudes and values (how to be) which, interiorised and manifested in our actions, behaviour or comportment lead us to maturity, excellence, fulfilment and happiness’ (Crespí 2018, 128). The theoretical construct of ‘competence’, so understood, is close to ‘virtue’, or *areté* (excellence) in Greek. In both cases, it refers to the stable and effective capacity or disposition of an individual to seek a positive end. This definition of personal competencies associates the concept of competence (Crespí and García-Ramos 2021) with that of virtue as the expression of fulfilment and excellence. Thus, in conceptual terms, it is possible to explore the notion of moral virtue through personal competencies. But it is important to explain first the dynamism of human action, from a Thomistic perspective, in which competences and virtues come into play.

Moral virtues and the dynamism of human action

Moral virtues are acquired habits (*héxis* in Greek); that is, internal and stable dispositions that allow an individual to act with goodness, and in so doing, perfect themselves (Aristotle, ca. 330 B.C.E.; 1985; Aquinas, ca. 1274; 1990). A virtuous act must have the intention (Aristotle 1985, 1105a28–35) of goodness, the awareness and deliberation to choose to do good, and the determination to carry out the act. Virtuous action requires good intention and good execution, with competence. The will is determined to carry out the action which the intelligence recognises as good based on an affective desire to achieve the good end. This dynamism of action implies a) that the person performs the action well, and b) that the person is perfected (becomes better) by carrying out the act, developing the capacity to carry out further virtuous acts (Aristotle 1985, 1106a15).

Aquinas (1990) recognises the importance of prudence and charity in the connection and unity of virtues in the dynamism of human action (Pinckaers 2005). Charity is the

gift and virtue which enables us to receive in freedom the action of the Holy Spirit, impelling us to act in conjunction with God's work. 'Without an active love, grasping the truth loses its vigour and fervour, becoming dry and dull (. . .) Thus the moral virtues need love in order to be formed in us and exercise in us' (Pinckaers 2015, 19). Prudence, in turn, directs each specific action, helping in deciding what to do, discerning here and now, what is best in the practice of each virtue in each circumstance (Pinckaers 2005).

From this perspective, integral or comprehensive formation refers to the exercise of cardinal virtues and personal competencies linked to charity. The cardinal virtues can be considered the 'core' or axis (*cardum* in Latin) of a integral formation, the aim of which is the fulfilment of the human person through charity. Each virtuous act supposes an interaction of affectivity, intelligence and will; the three faculties maintain a circular unity (Antúnez 2016) although it is possible to identify the principal faculty inherent in the act. Thus, an act of justice, aiming to give others their due in terms of their human dignity and rights, is inherent to will. An act of prudence, where the person clearly understands the correct course of action, are inherent to intelligence. Acts of fortitude and temperance, in which the persons act in reaction to a perceived good, is inherent to affectivity.

Personal competencies annexed to cardinal virtues

This proposal looks to Pieper (2017), Pinckaers (2005), Spaemann (1987) and Titus (2006) to explain virtues as part of the dynamism of human action, selecting those personal competencies most closely associated with the cardinal virtues. The personal competencies selected are analogous to the virtues annexed, following Aquinas' terminology (Aquinas 1990).

The prudent person exercises several other virtues and competencies, such as critical-thinking, good advice and deliberation in decision-making (Aquinas 1990). Two competencies have been selected as being key aspects of prudence: critical thinking and decision-making which are also related to these other virtues.

According to Aquinas (1990), the virtue of justice is oriented towards one's relation to others. The relational competencies associated with justice include leadership, understood as the act of guiding others towards a common good (López, Fernández, and Ortiz de Montellano 2023), and teamwork. These competencies appear as character strengths linked to justice in the VIA model (Peterson and Seligman 2004).

The virtues of fortitude and temperance enable the person to act well and can be associated with several competencies such as personal growth (to continue improving to become the best version of oneself), emotional management, resilience and proactivity, necessary to overcome difficulties and undertake new challenges (Titus 2006).

Based on this theoretical foundation, we have developed the questionnaire QCV (Questionnaire on Competencies and Cardinal Virtues). The theoretical structure of the QCV is provided in Table 1.

Objectives of the study

After providing a theoretical and methodological basis for the measurement of cardinal virtues through personal competencies, we present the objectives of the study. The main objectives of this research are: 1) to design a self-perception

Table 1. Personal competencies associated with the cardinal virtues according to the QCV.

Virtue (definition)	Competence (definition)
Prudence (Knowing the correct course of action and deciding to do so to achieve a positive goal)	Critical thinking (To recognise, analyse and interpret events and circumstances to discern the truth). Decision-making (To choose from various options what is best and most beneficial).
Fortitude (Overcoming difficulties and acting with determination to achieve a positive goal).	Resilience (To face and overcome challenges, being strengthened by adversity). Proactivity (To undertake actions to achieve objectives, dreams, and life goals).
Temperance (Moderating desires and finding balance in action and use of created goods).	Personal growth (To continue learning and improving to become the best version of oneself). Emotional management (To recognise, identify, understand, and manage one's own emotions).
Justice (Giving others their due in terms of their human dignity and rights).	Leadership (To accompany and guide others towards a positive goal, serving and bringing out the best in others in pursuit of their goals). Teamwork (To work cooperatively with others with different and complementary skills in pursuit of a shared objective or common mission).

Based on Crespí et al. (2021).

questionnaire on competencies associated with cardinal virtues; 2) to analyse the psychometric properties of the questionnaire by means of an exploratory and pilot study.

Method

Sample (participants)

The population of the study was the students of the Universidad Francisco de Vitoria (UFV). The sample was collected using an incidental nonprobability method given the easy access to these students on the part of researchers. The final sample consisted of 325 students from the UFV Faculty of Education and Psychology, 82.8% of whom were women (269 students) and 17.2% men (56 students). The distribution by degree was the following: 9.8% Pre-primary education (32 students), 6.8% Primary education (22 students), 67.1% Psychology (218 students) and 16.3% Psychology and Criminology (53 students). The inclusion criteria was the year of the students, being either in the first or fourth year of study: 73.8% were first-year students (240 students) and 26.2% were fourth-year students (85 students).

Variables and instrument

On the basis of the theoretical considerations above and previous studies, we proceeded to design a questionnaire that measures the cardinal virtues based on associated personal competencies (Crespí et al. 2021; Obispo Díaz et al. 2022). Each cardinal virtue of the QCV scales (Questionnaire on Cardinal Virtues) is associated with two competencies; and each competence is measured using three items on a 6-point Likert-type scale. The theoretical structure of the QCV and the items used to measure competencies are provided in Table 2.

Table 2. QCV items and their association with personal competences and cardinal virtues.

Item	Content	Competence	Virtue
1	I question ideas (my own and those of others).	Critical thinking	Prudence
2	I contrast my ideas with reality.		
3	I change my ideas when I have reason to do so.		
4	When I have to take an important decision, I consider possible alternatives.	Decision making	
5	I ask for advice from others before taking important decisions.		
6	I take decisions considering the possible consequences of my actions.		
7	I face challenge and adversity with a positive attitude.	Resilience	Fortitude
8	I easily overcome problems or adverse situations.		
9	After a difficult or adverse situation, I come out stronger.		
10	I take responsibility for the consequences of my actions.	Proactivity	
11	I take the initiative to achieve my goals.		
12	When I encounter obstacles, I look for solutions.		
13	I identify aspects to improve my life.	Personal growth	Temperance
14	I set challenging goals and objectives.		
15	I am constant in pursuing my goals.		
16	I can identify my emotions. (Item 16)	Emotional Management	
17	I understand the “why” of my emotions.		
18	I manage my emotions, adapting to the situation.		
19	I am engaged with my peers, encouraging them to give the best of themselves.	Leadership	Justice
20	I help others when they need it, regardless of my personal feelings for them.		
21	I am sensibly oriented towards others to help them achieve their goals.		
22	When teamworking, I try to foster a climate of listening among all the members of the team.	Teamwork	
23	I fulfil the tasks established by the work team.		
24	When teamworking, I collaborate with my teammates to improve the work of the team.		

Once the QCV was completed, it was favourable validated by a team of experts (Crespi et al. 2021). In addition, a socio-demographic dimension was added to the scale presented, allowing information to be collected on participants’ gender, age, bachelor’s degree and grade level.

Procedure

The study presented is based on quantitative methodology. Generalisability of results is sought. Specifically, it is a non-experimental design (*ex post facto*) given the non-manipulation of the study variables (León and Montero 2020).

The students were contacted thanks to the professors of the Faculty of Education and Psychology of Francisco de Vitoria University (Madrid), who allowed researchers access to their classrooms to collect information in person during the first semester of 2021. The questionnaire was distributed using QR codes created using the JotForm application. The students gave their informed consent to share their personal data in accordance with applicable data protection regulations (European Union Legislation; Regulation 2016/679; Directive 2016/680; Regulation 2018/1725).

Data analysis

Firstly, a descriptive analysis was made of each item, estimating the measures of central tendency (mean), dispersion (standard deviation and variation coefficient) and

distribution (asymmetry and kurtosis) of the items. Then, the univariate normality of the items was analysed using the Kolmogorov-Smirnov test.

After that, the homogeneity of each item was calculated (corrected item-test correlation). All items had correlation above .30. In addition, the reliability of each of the complete questionnaire and each of the virtues was calculated using Cronbach's Alpha coefficient. Finally, an exploratory factor analysis (AFE) was performed to obtain construct evidence of the questionnaire. For this analysis, the following was used unweighted least squares (ULS) method. This technique was used because the multivariate normality assumption was not assumed. In addition, the factor was rotated from Oblimin. It should be noted that for the definition of the factors, it was taken into account that the items had factor loadings greater than .30.

The results were obtained using SPSS v.26 and interpreted according to Abad et al. (2011) and García-Ramos (2012).

Results

This research project aims to provide empirical evidence on the psychometric properties of the scale created. The following section explains the results in terms of the psychometric properties of the QCV. First, the descriptive results are presented (Table 3).

All items scored above 4 points, which may be considered high on a 6-point Likert-type scale. In general terms, the responses of participants in each of the items may be considered homogenous (CV equal or below 30). Additionally, none of the items had a normal distribution according to the Kolmogorov-Smirnov test. Nonetheless, over 70%

Table 3. Descriptive statistics of QCV items.

Item	<i>M</i>	<i>SD</i>	<i>VC</i>	<i>Skew.</i>	<i>Kurtosis</i>
1 I question ideas (my own and those of others).	4.67	1.18	.25	-.86	.60
2 I contrast my ideas with reality.	4.91	1.00	.20	-1.12	1.95
3 I change my ideas when I have reason to do so.	5.15	.97	.19	-1.33	2.07
4 When I have to take an important decision, I consider possible alternatives.	5.19	.99	.19	-1.79	4.37
5 I ask for advice from others before taking important decisions.	5.01	1.22	.24	-1.28	1.04
6 I take decisions considering the possible consequences of my actions.	4.99	1.04	.21	-1.01	1.18
7 I face challenge and adversity with a positive attitude.	4.08	1.21	.30	-.22	-.53
8 I easily overcome problems or adverse situations.	4.06	1.06	.26	-.24	-.13
9 After a difficult or adverse situation, I come out stronger.	4.51	1.16	.26	-.75	.53
10 I take responsibility for the consequences of my actions.	5.07	.90	.18	-1.21	2.48
11 I take the initiative to achieve my goals.	4.77	1.03	.22	-.75	.44
12 When I encounter obstacles, I look for solutions.	4.81	.95	.20	-.71	.49
13 I identify aspects to improve my life.	5.13	.95	.19	-1.20	1.92
14 I set challenging goals and objectives.	4.66	1.02	.22	-.57	-.08
15 I am constant in pursuing my goals.	4.42	1.21	.27	-.56	-.30
16 I can identify my emotions. (Item 16)	4.62	1.24	.27	-.87	.33
17 I understand the "why" of my emotions.	4.28	1.20	.28	-.50	-.12
18 I manage my emotions, adapting to the situation.	4.32	1.16	.27	-.59	.01
19 I am engaged with my peers, encouraging them to give the best of themselves.	4.62	1.05	.23	-.71	.31
20 I help others when they need it, regardless of my personal feelings for them.	5.25	.94	.18	-1.62	3.88
21 I am sensibly oriented towards others to help them achieve their goals.	4.97	.96	.19	-1.10	1.84
22 When teamworking, I try to foster a climate of listening among all the members of the team.	5.16	.99	.19	-1.36	1.93
23 I fulfil the tasks established by the work team.	5.33	.94	.18	-1.81	4.47
24 When teamworking, I collaborate with my teammates to improve the work of the team.	5.39	.87	.16	-2.16	7.02

M = Mean; *SD* = Standard deviation; *VC* = Variation Coefficient.

of the items (17 out of 24) show, in line with Pardo et al. (2009), acceptable levels of asymmetry and kurtosis (between -2 and $+2$) to produce a slight non-compliance with normality.

Regarding internal consistency, the scale (n items = 24) was found to be $\alpha = .90$. These results reflected adequate internal consistency. The following results were obtained for the reliability of each of the virtues: Prudence: .69; Fortitude: .77; Temperance: .77; Justice: .88.

Given the results obtained, the virtues showed good internal consistency. Only prudence had a value below .70, which could be improved. However, given the number of virtue items (n items = 6) these values are adequate. The reason for this is that, according to Classical Test Theory (CTT), reliability is associated with the number of items in the scale.

Finally, an initial AFE was performed ($KMO = .90$; Bartlett test $< .01$). Items 5 (I ask for advice from others before taking important decisions) and 6 (I take decisions considering the possible consequences of my actions) were eliminated as they showed low factor loadings ($\lambda < .30$). Results show a correlated four-factor structure that explains 45% of the total variance. These factors showed significant correlations between all factors. Only factor 3 correlated negatively. Therefore, this factor is defined in the opposite way to the others.

Table 4 shows the results for the number of factors, the percentage explained by each factor and the factor loadings of each item on its factor.

Justice items (19 to 24) appear in factor 1. There are also three cross-loading cases and item 13, which was expected to appear with the rest of Temperance items (13 to 18). Emotional management (16 to 18) items appear in factor 2. Fortitude items (7 to 12) appear in factor 3, together with items 14 y 15 of Personal growth competence. Also noteworthy are the negative factor loadings that appear here. This would imply that this factor would be defined in the opposite direction. Finally, the Prudence items appear in factor 4. It would imply that this factor would be defined in an opposite meaning. Finally, Prudence items appear in factor 4.

Finally, given the elimination of items 5 and 6, the reliability of the scale and the virtue of Prudence was re-estimated. The results revealed a small decrease in the total scale ($\alpha = .89$) and in the Prudence virtue ($\alpha = .65$).

Discussion and conclusions

The QCV measures personal competencies and assumes that the practice of these competencies indicates the presence of the cardinal virtues. It does not measure the intentionality of the action but can help the person who has answered the self-perception questionnaire to reflect on it. The questionnaire is an aid to self-assessment.

The QCV questionnaire was developed based on a well-reasoned and justified conceptual proposal, considering three fundamental components of character education (intelligence, will, and affectivity), with a personalist vision of philosophical anthropology rooted in the Aristotelian-Thomistic tradition. This model has components in common with the one developed by Morgan et al. (2017) and Thomas Lickona's proposal (1991) about moral knowing, moral feeling, and moral action.

Table 4. Factor loadings of QCV items.

Item	Factor (% explained variance)			
	1 (31%)	2 (6.1%)	3 (4.3%)	4 (3.6%)
1 I question ideas (my own and those of others).				.64
2 I contrast my ideas with reality.				.60
3 I change my ideas when I have reason to do so.	.30			.45
4 When I have to take an important decision, I consider possible alternatives.				.32
7 I face challenge and adversity with a positive attitude.			-.60	
8 I easily overcome problems or adverse situations.			-.55	
9 After a difficult or adverse situation, I come out stronger.			-.35	
10 I take responsibility for the consequences of my actions.	.35			-.38
11 I take the initiative to achieve my goals.	.36			-.53
12 When I encounter obstacles, I look for solutions.				-.56
13 I identify aspects to improve my life.	.36			
14 I set challenging goals and objectives.			-.51	
15 I am constant in pursuing my goals.			-.59	
16 I can identify my emotions. (Item 16)		.68		
17 I understand the “why” of my emotions.		.77		
18 I manage my emotions, adapting to the situation.		.56	-.30	
19 I am engaged with my peers, encouraging them to give the best of themselves.	.50			
20 I help others when they need it, regardless of my personal feelings for them.	.54			
21 I am sensibly oriented towards others to help them achieve their goals.	.49			
22 When teamworking, I try to foster a climate of listening among all the members of the team.	.67			
23 I fulfil the tasks established by the work team.	.69			
24 When teamworking, I collaborate with my teammates to improve the work of the team.	.74			

The current version of QCV questionnaire consists of 22 items, somewhat more than the Leadership Virtues Questionnaire (Riggio et al. 2010) but significantly shorter than the VS and the VIA, mentioned above. There are conceptual similarities between the VIA and the QCV. As indicated above, the cardinal virtues form a part of the VIA (Peterson and Seligman 2004) and most of the competencies selected bear a great deal of resemblance to the character strengths appearing in the VIA: critical thinking, resilience, proactivity, emotional management, leadership, and teamwork. There are, however, competencies incorporated in the QCV which do not appear in the VIA such as personal growth or decision-making.

One of the criticisms of the VIA model is that it does not adequately explain the interrelationship between the faculties in human action (Wright, Warren, and Snow 2021). The model of virtue education on which the QCV questionnaire is based offers a vision of the dynamism of human action and how the cardinal virtues and personal competencies are related to human faculties and charity. The operative variables (competencies) have been defined in line with elements of positive psychology and competence-oriented education, associated with the four cardinal virtues.

The pilot application of the QCV revealed that the questionnaire has, in general terms, good psychometric properties. The design and application of the measurement instrument considered the recommendations for self-report instruments, in particular Likert-type scales (Matas 2018). The empirical results point towards the content validity of the construct. The full scale has a Cronbach’s alpha of .897, removing items 5 and 6. The factor analysis shows that the factors correspond to the virtues but do not correspond exactly to the predefined competencies (in particular, Personal growth linked to Temperance) and it is therefore appropriate to further study their

content and fine-tune the instrument. The correlation matrix between factors shows that the four virtues are related to each other, in accordance with the theoretical model provided.

It is appropriate to adjust the questionnaire, specifically the elimination of items 5 and 6. Also is desirable the revision of the Personal growth competence items (items 13 to 15). Item 15 shows a low correlation with the rest of the scale and the results of the exploratory factor analysis show that its content differs from the proposed theoretical model.

Once the QCV questionnaire has been adjusted, it will be applied to a sample of 2100 students from universities in Mexico, Chile, and Spain to test its construct validity and compare the results between countries. Future avenues of research will include studies on construct validity (through EFA and CFA factor analysis) and convergent validity (with VIA, LVQ and VS) for a better understanding of the disparities, similarities, and results of the measured construct (Brown, Treviño, and Harrison 2005; Riggio et al. 2010). Of course, construct validity is always a question of degree, and can never be considered as entirely complete or resolved (Fowers 2014). It should be noted that none of the questionnaires included in the review have been applied to Spanish speaking university students (Ames, Serafim, and Martin 2022), making the QCV a unique instrument for the measurement of virtues among this population.

Following the recommendations of Wright et al. (2021) is foreseen: 1) to gather, contrast and triangulate evidence, not depending on any single scale or self-report tool and recurring, for example, to observation by third persons; 2) to conduct a range of different and mutually reinforcing research projects to identify different aspects of virtue and its manifestation over time. And, finally, 3) to measure ‘constellations’ of virtues rather than measuring isolated virtues.

In any case, it has been empirically demonstrated that the QCV presented here is an effective instrument for assess the presence of the cardinal virtues through associated personal competencies. Additionally, this paper offers a theoretical justification of the possibility, limitations, and utility of measuring virtues through these personal competencies, based on the Aristotelian-Thomistic tradition in dialogue with positive psychology.

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