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The Influence of Education on Knowledge and Character

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Abstract: It is commonly assumed that formal education fosters both knowledge and character development. However, this study questions the integrity of this assumption. This research aims to investigate whether education and obtaining higher qualifications genuinely lead to enhanced general knowledge and a heightened awareness of one's ignorance regarding certain topics. Cross-sectional data from the World Values Survey (N > 90,000) on educational levels, general knowledge, and the acknowledgement of ignorance were analysed. Education levels corresponded with elevated general knowledge; however, both educated and less educated individuals displayed similar tendencies to acknowledge their unfamiliarity with certain topics. The hypothesis proposing that higher levels of education correlate with superior general knowledge was supported by the data, but the commendable trait of acknowledging one's ignorance does not appear to be cultivated among those with higher degrees. This research raises important questions about the value of advanced education as a builder of character and could constitute a call to universities to incorporate more formal ethics training into their curriculum.

Keywords: Education, knowledge, character, World Values Survey.

1. Introduction

The assumption that formal education is a catalyst for both knowledge acquisition and character development is deeply ingrained in modern societies. Emile Durkheim (1858-1917) emphasised the role of societal institutions, particularly in the education field, in maintaining social order, noting that the educational system transmits shared values and norms (Durkheim, 2001). His contemporary, John Dewey (1859-1952), identified the education system as crucial for moral development, a development aligned with responsibility and ethical decision-making (Dewey, 2008). Moving beyond the view of institutions as the primary role-players, Paulo Freire (1921-1997) argued that both educators and individuals share the responsibility for moral development. In this view, educators facilitate critical consciousness, while individuals actively participate in processes that liberate them from oppressive structures (Freire, 2020). Incorporating elements of these theories, Lawrence Kohlberg's (1927-1987) cognitive-developmental theory proposes that moral development is a cognitive process. According to Kohlberg, educators and societal influences contribute to this process, but individuals must actively engage in progressing through universal stages of moral reasoning. In this framework, ethical growth occurs progressively (Kohlberg, 1981). These social scientists and educators made a convincing argument towards linking education and educational systems to moral development (Richards, 2019; Sellick, 2005).

The assumption of the link between education and moral development is also embedded in several empirical studies (Craft, 2013; Ford & Richardson, 1994; Headley-Soto, 2013; Kum-Lung & Teck-Chai, 2010; Motlagh et al., 2013). Ford and Richardson (1994), in their review of literature, found that the number of years of education, in some studies (Browning & Zabriskie, 1983; Deshpande, 1997; Jones & Gautschi, 1988; and Lane et al., 1988), correlate with ethical behaviour (e.g., viewing the acceptance of gifts and favours within the workplace as unethical), while in other studies (Dubinsky & Ingram, 1984; Kidwell et al., 1987; Serwinek, 1992), no such relationships were found.

Some individual studies showed positive relationships between education and ethics. Deshpande (1997, p. 79) found that educated managers were more ethical, and reports that "the practice of padding expense accounts by over 10% was reported to be significantly more unethical by managers with a graduate degree." Kum-Lung and Teck-Chai (2010) report that "significant difference was found in business ethics across different educational levels," with graduate-level workers conducting themselves more ethically. Headley-Soto (2013, p. ii) similarly reported "statistically significant and sizable relationships between educational attainment and individuals' perceptions of morality, moral reasoning, moral attitudes towards personal or private conduct, and moral attitudes towards citizens' relationship with government."

The relationship between education and ethics may also be conditional or contextual. Scheepers et al. (2002: 157), for example, concluded in a cross-national study, that "the effects of individual education on moral development are stronger in more religiously heterogeneous countries and weaker in more religiously homogeneous countries and that the effects of individual education on moral attitudes are weaker in short-standing democracies than in long-standing ones."

In other cases, no empirical links were found between educational level and moral development. Motlagh et al. (2013), in a study of journalists, found that "neither gender nor journalism education made any difference in journalists' ethical decisions. The findings also showed the more work experience the journalists had, the more fair decisions they made in uncertain situations." In a relatively recent review of literature, Craft (2013) identified three studies that investigated the relationship between educational level and ethics (Cagle & Baucus, 2006; Forte, 2004; Marques & Azevedo-Pereira, 2009), and in none of these cases was the relationship significant.

From the aforementioned material, it is apparent that while, in theory, the link between educational level and moral development is clear, the empirical evidence supporting this link is not as definitive. Several studies suggest a potential connection, but this relationship is not conclusively established. Additionally, it is noted that contextual factors might influence the strength of this relationship if it indeed exists. This observation underscores the complexity of determining the impact of education on moral development and necessitates further research.

In this research, I explore the relationship between educational attainment and moral development. This inquiry is rooted in the public expectation that education should foster an ethical society. Should there be no significant correlation between educational level and moral development, it raises concerns for educational institutions regarding their fulfilment of this societal mandate.

2. Literature Review

Ancient educational institutions, such as the academies of Greece or the monastic schools of the Middle Ages, were founded with the explicit goal of nurturing intellectual and moral virtues in students (Reeves, 2023; Woida, 2023). This tradition lives on in modern society, where schools, colleges, and universities are explicitly designed to convey factual information but also to instil critical thinking skills, ethical values, and social responsibility (Doddington et al., 2018). It is expected from the education system to contribute to the moral character of society (Ball, 2021), and it is anticipated in many cultures that education will contribute to more ethical behaviour (Cassidy, 2022; Sheng, 2014; Strataki & Petrogiannis, 2021).

Many theories of moral development emphasise the educational system's role (Vozzola, 2014), including the arguments of Jean Piaget (1932), Carol Gilligan (1993, 2018), and Elliot Turiel (1983, 2015). However, the focus here was on Lawrence Kohlberg's theory (1971, 1977), primarily because of its comprehensive nature in dealing with the stages of moral reasoning. Kohlberg focuses on cognitive and moral development (Zizek et al., 2015). Zizek et al. (2025) comprehensively discuss the groundbreaking influence of Kohlberg in Kohlberg revisited.

Kohlberg's theory proposes three main levels of moral development, each comprising two stages (Klikauer, 2011; Kohlberg & Hersh, 1977). First is the pre-conventional level, where the most fundamental understanding of right and wrong is cultivated. This level consists of two stages. Obedience and punishment orientation is Stage 1, where actions are guided primarily by a desire to avoid punishment and, therefore, adhere to authority. The world seems black and white, with rules as unyielding pillars that dictate behaviour. In the next stage, individualism and exchange, people start to recognise that there is more than one point of view in the world, as they develop their own identity and personal agency. Fairness is interpreted as a simple exchange in a reciprocal manner.

The next level is the conventional level, where societal norms and the expectations of others become paramount. Here, the first stage is interpersonal relationships (Stage 3). The environment is shaped by relationships and the desire to maintain them, and people are motivated by social approval and a desire to be perceived as "good" by those they value. Next follows the maintaining of social order stage (Stage 4), where the focus falls on upholding laws, rules, and social conventions. The belief is that maintaining a functional society requires a shared understanding of and adherence to these structures, and that the greater good, rather than personal benefit, becomes the guiding principle.

Finally, the level of moral development constitutes the post-conventional level, where moral reasoning is governed by abstract thinking and the recognition of universal human rights. In the first stage, social contract and individual rights (Stage 5), laws are understood as abstract social contracts rather than rigid edicts. These should be respected only if they serve the greater good and protect individual rights. People should question and challenge societal norms that do not comply with this requirement. The final stage, universal principles (Stage 6), represents the highest peak of moral development. Here, individuals are guided by self-chosen ethical principles that usually include justice, dignity, and equality. These are adhered to regardless of the laws and social agreements of the present day, thus transcending specific societal rules and laws.

Kohlberg's theory is compelling, as it is easy to imagine a moral development process where individuals navigate through various life stages, from understanding their immediate surroundings and family dynamics to integrating into broader societal contexts and eventually contemplating universal principles. It is also easy to speculate that this progression, naturally associated with aging, could be significantly expedited through educational attainments. For instance, the ability to read might be a fundamental skill for achieving the maintenance of social order stage (Stage 4), while higher levels of education could enhance one's capacity for abstract thinking, an insight which is crucial for appreciating social contracts and individual rights (Stage 5). Furthermore, advanced education could foster the synthesis of universal principles (Stage 6), blending abstract concepts with overarching ethical standards.

Exploring the connection between education and moral development is justified, given that numerous researchers have embarked on such investigations (Craft, 2013; Ford & Richardson, 1994; Headley-Soto, 2013; Kum-Lung & Teck-Chai, 2010; Motlagh et al., 2013), yet consensus has not been reached. Additionally, the discussion of Kohlberg's theory is warranted. In analysing the universality of Kohlberg's theory, Snarey (1985) found "striking support for the underlying assumptions", which include the universality of the moral questions and the general applicability of the different stages, but also reports "biases in favour of complex urban societies and middle-class populations". A broad-based application of the theory may thus be acceptable.

2.1 Research question

How does formal education influence the acquisition of knowledge and the development of character traits, including the acknowledgement of ignorance, in individuals across various cultural and educational contexts?

2.2 Hypotheses

Hypothesis 1 - Knowledge Acquisition: Higher levels of formal education are positively correlated with a broader general knowledge base. This hypothesis posits that individuals with more years of education will exhibit a greater breadth and depth of general knowledge. [Null hypothesis: Higher levels of formal education are not related to a broader general knowledge base.]

Hypothesis 2 - Character Development: Formal education positively contributes to the development of moral and ethical character traits (which include acknowledging one's limitations and ignorance on various topics). [Null hypothesis: Formal education is not related to the development of moral and ethical character traits.] This hypothesis posits that educated individuals are more likely to admit when they lack knowledge or expertise in a particular area.

Despite what is presented above, it is also important to note that picking a wrong answer in a multiple-choice questionnaire by guessing is not typically considered a sign of bad character. It may indicate a willingness to take a chance or a desire to make an effort even when faced with uncertainty (Kahneman & Tversky, 1979). However, admitting that you do not know the answer can also be seen as an honest and humble approach, which aligns with positive character traits like integrity and humility, as described by philosopher Immanual Kant (1785) (Johnson & Cureton, 2022). Ultimately, the morality of guessing versus admitting you do not know the answer is context-dependent, depending on the circumstances and consequences of the decision and the prevailing norms and expectations of society, as described by John Stuart Mill (1861) (Brink, 2022).

3. Research Methods

A cross-sectional quantitative survey design was used, which falls within the positivist research paradigm. Positivism is based on the belief that there is an objective reality that can be measured and quantified. The structured survey would present quantitative data, allowing statistical analyses to be conducted to ascertain the relationships between variables. A cross-sectional survey design, where data are collected at a single point in time, is well-suited to examine associations between variables, as is the aim of this study. Some 93 768 respondents, representing 90 countries, with the largest sample from the Netherlands (N=4 554), the smallest from Northern Ireland (N=447), and an average sample size of 1,710 per country, were the participants in the study. All respondents from all countries were included. In terms of gender, 47.1% of respondents were men and 52.8% were women. The average age was 44.88 years (standard deviation=17.26).

The World Values Survey (WVS) was the only source of data (Inglehart et al., 2014). The WVS project team started collecting data on a variety of values and attitudes in 1981 (1st wave) and has collected data regularly since, with the latest data dating from 2022 (7th wave). The data from only the 7th wave were used, as this was the first time questions on general knowledge were posed. An extended and complicated question on education was asked to all respondents (Q275). The question included eight categories, and these are presented in Figure 1.

Q275-278. What is the highest educational level that you, your spouse, your mother and your father have attained?[3]

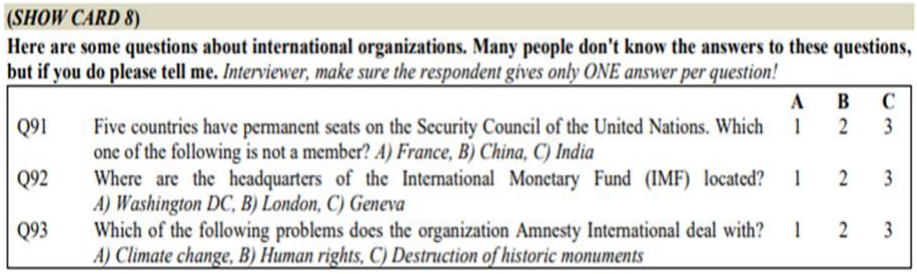
[Interviewer: code for each person separately. The table below uses codes ISCED-2011 – International Standard Classification for Education used by the UN and UNESCO. Your supervisor will provide you with a national-adapted list of codes. If the respondent has no spouse, no father or no mother, code "-3"=not applicable
Note, 'completed' = diploma or certificate]

		Q275. Respondent	Q276. Spouse	Q277. Mother	Q278. Father
0	Early childhood education (ISCED 0) / no education	0	0	0	0
1	Primary education (ISCED 1)	1	1	1	1
2	Lower secondary education (ISCED 2)	2	2	2	2
3	Upper secondary education (ISCED 3)	3	3	3	3
4	Post-secondary non-tertiary education (ISCED 4)	4	4	4	4
5	Short-cycle tertiary education (ISCED 5)	5	5	5	5
6	Bachelor or equivalent (ISCED 6)	6	6	6	6
7	Master or equivalent (ISCED 7)	7	7	7	7
8	Doctoral or equivalent (ISCED 8)	8	8	8	8
	For DK/ NA & other codes				

***Figure 1**: Q275 from the World Values Survey. Source: WVS 2022.*

Fortunately, as the plan was to use nominal data and Chi-quare analysis, the WVS staff compressed this data into three categories (Q275R), labelled lower, middle and higher education. This variable was used in this specific study.

The three questions regarding general knowledge are presented in Figure 2.



(SHOW CARD 8)

Here are some questions about international organizations. Many people don't know the answers to these questions, but if you do please tell me. *Interviewer, make sure the respondent gives only ONE answer per question!*

		A	B	C
Q91	Five countries have permanent seats on the Security Council of the United Nations. Which one of the following is not a member? *A) France, B) China, C) India*	1	2	3
Q92	Where are the headquarters of the International Monetary Fund (IMF) located? *A) Washington DC, B) London, C) Geneva*	1	2	3
Q93	Which of the following problems does the organization Amnesty International deal with? *A) Climate change, B) Human rights, C) Destruction of historic monuments*	1	2	3

Figure 2: *Q91-Q93 from the World Values Survey. Source: WVS 2022.*

Data on the reliability and the validity of the WVS are embedded in the history and the quality of the designers of the study and the research emanating from the study (see https://www.worldvaluessurvey.org/WVSContents.jsp).

3.1 Data analysis

First, demographic statistics for the respondents participating in the 7th wave were calculated – primarily to describe the sample and to compare that to what could be expected. Descriptive statistics for educational levels and general knowledge were then presented. The data was mostly nominal data, and as such, cross-tabulation was performed, with education portrayed as columns and the responses to the general knowledge questions presented as rows. This was used to assess if educational level impacted the answers to knowledge questions. Pearson's Chi-square was calculated to determine if educational level was related to the responses given to general knowledge questions. Significant Chi-square would be interpreted as statistically significant differences. However, as the sample size is large, Eta as well as Cramer's V-scores were also calculated, gathering information on the effect size. These scores, Eta and Cramer's V-scores, range from 0 to 1, with 0 indicating no association and 1 representing a perfect association. The range also serves as an indicator of the practical relevance of observed associations, with a value below .10 considered to be a small effect, .10 to .30 medium, and more than .3 perceived to be a large effect (Cohen, 1988; Fritz et al., 2012).

3.2 Ethical consideration

The Scientific Advisory Committee of the WVS Association, comprising leading academics from across the globe, ensures that only data collected according to the highest standards are included in the survey (see https://www.worldvaluessurvey.org/WVSContents.jsp). At a local level, clearance for this study was provided by the University of South Africa's Graduate School of Business Leadership RERC on the 22nd of January 2021, with reference number 2022_SBL_AC_001_SD .

4. Presentation of Results

4.1 Descriptive statistics

The descriptive data pertaining to educational level are presented in Table 1.

Table 1: *Educational level data*

Question	Response	Count	%	Valid %
Education	Lower	29891	31.7	32.0
Valid	Middle	32247	34.2	34.6

	Higher	31128	33.0	33.4
	Total	93266	98.9	100.0
Missing	Other missing	345	0.4	-
	No answer	513	0.5	-
	Don't know	154	0.2	-
	Total	1012	1.1	-
Total		94278	100	-

From Table 1, it is clear that the division in terms of three levels was successful as it created three groups of almost equal size. The answers to the general knowledge questions are presented below.

Table 2: *Answers to general knowledge questions*

Question	Response	Count	%	Valid %
Q91	A – Incorrect	8993	9.5	14.9
Valid	B – Incorrect	14736	15.6	24.4
	C – Correct	36572	38.8	60.6
	Total	60301	64.0	100.0
Missing	Missing; Not available	216	0.2	-
	Not asked	3056	3.2	-
	No answer	3576	3.8	-
	Don't know	27129	28.8	-
	Total	33977	36.0	-
	Grand total	94278	100	-
Q92	A – Correct	26107	27.7	43.6
Valid	B – Incorrect	12332	13.1	20.6
	C – Incorrect	21415	22.7	35.8
	Total	59854	63.5	100.0
Missing	Missing; Not available	168	0.2	-
	Not asked	3056	3.2	-
	No answer	3466	3.7	-
	Don't know	27734	29.4	-
	Total	34424	36.5	-
	Grand total	94278	100	-
Q93	A – Incorrect	6825	7.2	11.5
Valid	B – Correct	47048	49.9	79.2
	C- Incorrect	5532	5.9	9.3
	Total	59405	63.0	100.0
Missing	Missing; Not available	2560	2.7	-
	Not asked	7591	8.1	-
	No answer	2968	3.1	-
	Don't know	21754	23.1	-
	Total	34873	37.0	-
	Grand total	94278	100	-

4.2 Group differences

The qualification level and the answers to the questions provided the researcher with two sets of data: ordinal in terms of educational level and binary data regarding the answers to the general knowledge questions. These were used to test for differences using the Chi-square statistic (for statistically significant differences) and the Eta (as an indicator of the practical significance of the differences). These results are presented in Table 3.

Table 3: *Results on group differences*

		Education level									
		Lower		Middle		Higher		Total		Difference	
Q	Response	N	%	N	%	N	%	N	%	Chi2	Eta
91	Other	21604	72.3	19451	60.3	15871	51.0	56926	61.0	2916	.177
	Correct	8287	27.7	12796	39.7	15257	49.0	36340	39.0	-	(M)
	Other	21822	73.0	24045	74.6	23841	76.6	69708	74.7	104.6	.033
	Incorrect	8069	27.0	8202	25.4	7287	23.4	23558	25.3	-	(S)
	Other	28829	96.4	30848	95.7	30077	96.6	89754	96.2	45.7	.022
	Don't know	1062	3.6	1399	4.3	1051	3.4	3512	3.8	-	(S)
	Total	29891	100	32247	100	31128	100	93266	100	-	
92	Other	22735	76.1	23156	71.8	21437	68.9	67328	77.2	396.4	.068
	Correct	7156	23.9	9091	28.2	9691	31.1	25938	22.8	-	(S)
	Other	20880	69.9	20582	63.8	18278	58.7	59740	64.1	822.2	.094
	Incorrect	9011	30.1	11665	36.2	12850	41.3	33526	35.9	-	(S)
	Other	28863	96.6	30909	95.9	30099	96.7	89871	96.4	37.1	.020
	Don't know	1028	3.4	1338	4.1	1029	3.3	3395	3.6	-	(S)
	Total	29891	100	32247	100	31128	100	93266	100	-	
93	Other	19124	64.0	15199	47.1	12225	39.3	46548	49.9	3874	.204
	Correct	10767	36.0	17048	52.9	18903	60.7	46718	50.1	-	(M)
	Other	25261	84.5	28022	86.9	27712	89.0	80995	86.8	272.2	.052
	Incorrect	4630	15.5	4225	13.1	3416	11.0	12271	13.2	-	(S)
	Other	29022	97.1	31135	96.6	30209	97.0	90366	96.9	18.9	.014
	Don't know	869	2.9	1112	3.4	919	3.0	2900	3.1	-	(S)
	Total	29891	100	32247	100	31128	100	93266	100	-	

Note: For all Pearson Chi-Square tests the degrees of freedom = 2 and the asymptotic significance (2-sided) <.001. Only Eta scores are presented, but it should be noted that in all cases this was equal to Cramer's V-scores, which had approximate significance <.001. In the Eta column, S indicates a small effect, and M indicates a medium effect size.

All group differences, as calculated with the chi-square test, were statistically significant. In the case of Q91, Q92, and Q93, the educational grouping, therefore, affected the percentage of respondents who answered the questions correctly and incorrectly, as well as the proportion who stated that they did not know the answers. In all cases (Q91, Q92, and Q93), those with higher educational levels answered the questions correctly, while in two cases (Q91 and Q93), the most incorrect answers were reserved for individuals with lower educational qualifications, apart from the case of Q92, where those in the middle group provided the most incorrect answers. These results address Hypothesis 1, which states that higher levels of formal education are positively correlated with a broader general knowledge base.

Data on the "don't know" answers have relevance to Hypothesis 2, where it is proposed that formal education positively contributes to the development of moral and ethical character traits. Here, the middle-educated group had the highest percentage of responses, followed by those in the lower group (Q91 and Q92), and then with the higher group in the case of Q93. Inspection of Table 3 reveals that the differences on "don't know," though all statistically significant, were smaller than those with the correct and incorrect answers and had the smallest effect size of all.

An analyst may be tempted to consider calculating "don't know" responses as a function of correct or incorrect, from the data presented in Table 3. However, this would not be wise, as the analyses

(chi-square tests) were conducted using data presented in rows, and percentages are presented per row, which makes comparisons across columns in Table 3 illogical.

5. Discussion of Findings

In the introduction to this article, the theoretical link between education and moral development or character is presented, focusing on esteemed scientists such as Emile Durkheim (Durkheim, 2001), John Dewey (Dewey, 2008), Paulo Freire (Freire, 2020), and Lawrence Kohlberg (Kohlberg, 1981). Kohlberg's theory of cognitive-developmental moral development is presented in greater detail (see Klikauer, 2011; Kohlberg & Hersh, 1977) because it is quite detailed, focusing on cognitive development, which is associated with education. This theory has also retained significant influence over time (Zizek et al., 2015) and has apparent validity across various cultures (Scheepers et al., 2002).

The connection between educational frameworks and the cultivation of intellectual and moral virtues has a deep-rooted history (Reeves, 2023; Woida, 2023). It remains an objective that contemporary schools, colleges, and universities strive towards (Doddington et al., 2018). It is widely anticipated that education plays a crucial role in developing moral character both in individuals (Cassidy, 2022; Sheng, 2014; Strataki & Petrogiannis, 2021) and within society at large (Ball, 2021).

Despite the theoretical link and the expectations regarding education and moral development, empirical studies lack consensus (Craft, 2013; Ford & Richardson, 1994; Headley-Soto, 2013; Kum-Lung & Teck-Chai, 2010; Motlagh et al., 2013), warranting further investigation. Two hypotheses were set: Hypothesis 1: Higher levels of formal education are positively correlated with a broader general knowledge base, and Hypothesis 2: Formal education positively contributes to the development of moral and ethical character traits.

The methodology followed was sound in many respects, but it could also be criticised. The sample was extensive, spanning multiple countries and including over 90,000 respondents. Considering the total pool of respondents as a single entity could be justified as moral development processes, at least those proposed by Kohlberg, seem to be universally applicable (Scheepers et al., 2002). The sample seems appropriate/representative, as in terms of gender, there was a marginal predominance of female respondents, common to such surveys (Korkeila et al., 2001; Tolonen et al., 2006). Given that the samples were randomly selected, the relatively high average age of 44.88 years (Standard deviation=17.26) should be regarded as representative of the population. This is also not unexpected, as response rates among younger people are lower (Korkeila et al., 2001) and declining faster (Tolonen et al., 2006) than amongst older people.

The data collected includes data on educational level and responses to general knowledge questions. Regarding education, the WVS staff divided the respondents into three groups of educational levels, each comprising roughly a third of the sample (Lower-31.7%; Middle-34.2%; Higher-33.0%). Though convenient for statistical analyses and comparison across groups, it is important to note that this distribution does not align with the global population (UNESCO, 2017), where illiterate individuals significantly outnumber the literate. The data collected on general knowledge may not truly reflect general knowledge but rather pertain to knowledge about international affairs. Not possessing this specific knowledge is unlikely to have a substantial impact on the average person on the street or even the most esteemed academic.

The study revealed that, in all instances, formal education correlated with general knowledge. Chi-square values and inspection results suggested that individuals with higher levels of education consistently outperformed those with lower levels. For instance, on Question 91, 27.7% of individuals with lower education provided the correct answer, compared to 39.7% for those with moderate education and 49.0% for the most educated group. This represents an approximate 10% increase in correct answers per educational level. Nevertheless, this effect size qualifies as medium, as indicated by Eta and Cramer's V-scores of .177, suggesting that the effect size is relatively modest. It is worth

noting that incorrect answers were prevalent, especially in this multiple-choice question format, with respective percentages of 27.0% (Low education), 25.4% (Middle education), and 23.4% (High education). Interestingly, these differences between groups on incorrect answers were smaller (Eta and Cramer's V-scores of .033 - small effect), with individuals possessing higher levels of education less frequently selecting incorrect options, but not to the extent that they answered the answers correctly. Hypothesis 1: Higher levels of formal education are positively correlated with a broader general knowledge base, could be accepted – the null hypothesis was rejected. This applied not only to Q91 but also to Q92 and Q93.

Reported in Table 3 are low percentages of respondents who admitted to not knowing the answers to the questions. Rather than admitting that they did not know the answers, they decided to select one of the three options. Referring back to Q91: 3.6% of the lower-educated respondents selected the "don't know" option, 4.3% of the middle-level educated, and 3.4% of the higher-level educated respondents. Here, the Eta and Cramer's V-scores were .022, again a small effect. Should the difference in effect sizes be considered across all three questions (Q91: Correct = .177(M), Incorrect = .033(S), Don't know = .022(S); Q92: Correct = .068(S), Incorrect = .094(S), Don't know = .020(S); Q93: Correct = .204(M), Incorrect = .052(S), Don't know = .014(S)), it is clear that the difference across correct answers was the largest (with the more educated performing better), followed by the incorrect answers. In the case of the "don't know" responses, these differences were the smallest, and in all cases, this effect was numerically the smallest of all.

Hypothesis 2: Formal education positively contributes to the development of moral and ethical character traits. This hypothesis was not accepted – the null hypothesis could not be rejected. These results are aligned with many other studies (Dubinsky & Ingram, 1984; Cagle & Baucus, 2006; Forte, 2004; Kidwell et al., 1987; Marques & Azevedo-Pereira, 2009; Serwinek, 1992), where researchers could not find such a relationship. Considering the literature review presented here, more research seems to reflect the absence of the relationship between educational levels and moral development.

The study found that formal education did not correspond to ethical behaviour when responding to general knowledge questions. In all cases, individuals were more inclined to guess an answer (provide the incorrect answer), even educated ones, rather than admitting ignorance. It might be expected that educated individuals have less motivation to flamboyantly demonstrate their knowledge, resorting to guessing, raising ethical implications.

6. Conclusions and Recommendations

The research revealed a positive correlation between levels of formal education and general knowledge. Individuals with more advanced formal education demonstrated superior skills in answering the questions posed, supporting Hypothesis 1. This finding reinforces the idea that education is connected to an expanded general knowledge base.

Contrary to expectations, the study found no link between levels of formal education and ethical behaviour when responding to multiple-choice questions. Participants, regardless of their educational background, consistently chose to guess rather than admit their lack of knowledge. This behaviour suggests that higher education does not necessarily make individuals more inclined to recognise and acknowledge their limitations or ignorance on various topics, refuting Hypothesis 2.

These findings prompt a re-evaluation of education's impact on character development, suggesting that educational institutions should reflect on their effectiveness in contributing to the moral advancement of society. It may be that the acquisition of knowledge does not always translate into enhanced moral development. Additionally, further research is needed to explore the complex relationship between education, knowledge acquisition, and character.

The research has limitations, particularly in the interchangeable use of the terms "character," "moral development," and "ethics" throughout the text and in the literature analysis. While these terms are interconnected, some would argue that they have distinct meanings. Furthermore, guessing when answering multiple-choice questionnaires does not necessarily indicate poor character, as previous studies have shown (Gyllstad et al., 2015; Jennings & Bush, 2019).

In summary, while formal education appears to improve general knowledge, it does not consistently lead to improved ethical behaviour in terms of acknowledging one's limitations or ignorance on various topics. Therefore, the proposal for formal education programs on ethics is made, as a theoretical understanding and awareness of ethical principles could foster practical ethical behaviour in real-world situations.

7. Declarations

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Data Availability: The study sourced information from publicly accessible secondary datasets available from the World Values Survey. For more information, **visit.**

References

Ball, S. J. (2021). *The education debate*. Policy Press.

Brink, D. (2022). Mill's moral and political philosophy. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition). https://plato.stanford.edu/archives/fall2022/entries/mill-moral-political/

Browning, J., & Zabriskie, N. B. (1983). How ethical are industry buyers? *Industrial Marketing Management, 12*, 219–224.

Cagle, J. A. B., & Baucus, M. S. (2006). Case studies of ethics scandals: Effects on ethical perceptions of finance students. *Journal of Business Ethics, 64*, 213-229. https://doi.org/10.1007/s10551-005-8503-5

Cassidy, C. (2022). Philosophy with Children as and for Moral Education. In *Conceptions of Childhood and Moral Education in Philosophy for Children* (pp. 13–28). Springer Berlin Heidelberg.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Erlbaum.

Craft, J. L. (2013). A review of the empirical ethical decision-making literature: 2004–2011. *Journal of Business Ethics, 117*, 221-259. https://doi.org/10.1007/s10551-012-1518-9

Deshpande, S. P. (1997). Managers' perception of proper ethical conduct: The effect of sex, age, and level of education. *Journal of Business Ethics, 16*, 79-85. https://doi.org/10.1023/A:1017917420433

Dewey, J. (2008). *Democracy and education*. Read Books. https://doi.org/10.1017/9781316492765

Doddington, C., Heilbronn, R., & Higham, R. (2018). John Dewey's democracy and education 100 years on. *Journal of Philosophy of Education, 52*(2), 284-286. https://doi.org/10.1111/1467-9752.12285

Dubinsky, A. J., & Ingram, T. N. (1984). Correlates of salespeople's ethical conflict. An exploratory investigation. *Journal of Business Ethics, 3*, 343–353. https://doi.org/10.1007/BF00381759

Durkheim, E. (2001). *Moral education: A study in the theory and application of the sociology of education*. Free press.

Ford, R. C., & Richardson, W. D. (1994). Ethical decision making: A review of the empirical literature. *Journal of Business Ethics, 13*, 205-221. https://doi.org/10.1007/BF02074820

Forte, A. (2004). Business ethics: A study of the moral reasoning of selected business managers and the influence of organisational ethical climate. *Journal of Business Ethics, 57*, 167-173. https://doi.org/10.1023/B:BUSI.0000033610.35181.ef

Freire, P. (2020). Pedagogy of the oppressed. In *Toward a Sociology of Education* (pp. 374-386). Routledge.

Fritz, C. O., Morris, P. E., & Richler, J. J. (2012). Effect size estimates: Current use, calculations, and interpretation. *Journal of Experimental Psychology: General, 141*(1), 2-18. https://doi.org/10.1037/a0024338

Gilligan, C. (1993). *In a different voice: Psychological theory and women's development*. Harvard University Press.

Gilligan, C. (2018). Revisiting" In a Different Voice". *LEARNing Landscapes, 11*(2), 25–30.

Gyllstad, H., Vilkaitė, L., & Schmitt, N. (2015). Assessing vocabulary size through multiple-choice formats: Issues with guessing and sampling rates. *ITL-International Journal of Applied Linguistics, 166*(2), 278-306. https://doi.org/10.1075/itl.166.2.04gyl

Headley-Soto, R. X. (2013). *Educational attainment and morality: An empirical study*. Georgetown University.

Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.). (2014). *World Values Survey: Round Six - Country-Pooled Datafile Version.* Systems Institute.

Jennings, S., & Bush, M. (2019). A comparison of conventional and liberal (free-choice) multiple-choice tests. *Practical Assessment, Research, and Evaluation, 11*(1), #8. https://doi.org/10.7275/4q8w-5h20

Johnson, R., & Cureton, A. (2022). Kant's moral philosophy. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition). https://plato.stanford.edu/archives/fall2022/entries/kant-moral/

Jones, T. M., & Gautschi, F. J. (1988). Will the ethics of business change? A survey of future executives. *Journal of Business Ethics, 7*, 231–248. https://doi.org/10.1007/BF00381827

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263-292. https://doi.org/10.1142/9789814417358_0006

Kidwell, J. M., Stevens, R. E., & Bethke, A. L. (1987). Differences in ethical perceptions between male and female managers: Myth or reality? *Journal of Business Ethics, 6*, 489–493. https://doi.org/10.1007/BF00383291

Klikauer, T. (2011). The ethics of the ILO. Kohlberg's universal moral development scale. *Ramon Llull Journal of Applied Ethics, 2*, 33–56.

Kohlberg, L. (1921). *The philosophy of moral development: Moral stages and the idea of justice.* Harper & Row.

Kohlberg, L. (1971). Stages of moral development. *Moral Education, 1*(51), 23-92.

Kohlberg, L. (1981). *The philosophy of moral development: Moral stages and the idea of justice*. Harper & Row.

Kohlberg, L., & Hersh, R. H. (1977). Moral development: A review of the theory. *Theory into Practice, 16*(2), 53-59.

Korkeila, K., Suominen, S., Ahvenainen, J., Ojanlatva, A., Rautava, P., Helenius, H., & Koskenvuo, M. (2001). Non-response and related factors in a nation-wide health survey. *European Journal of Epidemiology, 17*, 991-999. https://doi.org/10.1023/A:1020016922473

Kum-Lung, C., & Teck-Chai, L. (2010). Attitude towards business ethics: Examining the influence of religiosity, gender and education levels. *International Journal of Marketing Studies, 2*(1), 225-232.

Lane, M. S., Schaupp, D., & Parsons, B. (1988). Pygmalion effect: An issue for business education and ethics. *Journal of Business Ethics, 7*, 223–229. https://doi.org/10.1007/BF00381872

Marques, P. A., & Azevedo-Pereira, J. (2009). Ethical ideology and ethical judgments in the Portuguese accounting profession. *Journal of Business Ethics, 86*, 227-242. https://doi.org/10.1007/s10551-008-9845-6

Motlagh, N. E., Hassan, M. S. B. H., Bolong, J. B., & Osman, M. N. (2013). Role of journalists' gender, work experience and education in ethical decision making. *Asian Social Science, 9*(9), 1-10. http://dx.doi.org/10.5539/ass.v9n9p1

Piaget, J. (1932). *The moral judgment of the child.* Free Press.

Reeves, A. (2023). Monastic and university education in the medieval and early modern West. In J. Marten (Ed.), *The Oxford Handbook of the History of Youth Culture*. Oxford Handbooks. https://doi.org/10.1093/oxfordhb/9780190920753.013.2

Richards, H. (2019). Moral (and ethical) realism. *Journal of Critical Realism, 18*(3), 285–302.

Scheepers, P., Te Grotenhuis, M., & Van Der Slik, F. (2002). Education, religiosity and moral attitudes: Explaining cross-national effect differences. *Sociology of Religion, 63*(2), 157–176. https://doi.org/10.2307/3712563

Sellick, M. P. (2005). *Cognition, interaction and critique: A structural pragmatic approach to pedagogy.* University of California, Irvine.

Serwinek, P. J. (1992). Demographic and related differences in ethical views among small businesses. *Journal of Business Ethics, 11*, 555–566. https://doi.org/10.1007/BF00881448

Sheng, X. (2014). Parental expectations relating to children's higher education in urban China: Cultural capital and social class. *Journal of Sociology, 50*(4), 560–576. https://doi.org/10.1177/1440783312467096

Snarey, J. R. (1985). Cross-cultural universality of social-moral development: A critical review of Kohlbergian research. *Psychological Bulletin, 97*(2), 202–232.

Strataki, I., & Petrogiannis, K. (2021). Greek Roma mothers' relationship with education: aspirations and expectations regarding the educational future of their children. *Contemporary Social Science, 16*(4), 480–493. https://doi.org/10.1080/21582041.2020.1850848

Tolonen, H., Helakorpi, S., Talala, K., Helasoja, V., Martelin, T., & Prättälä, R. (2006). 25-year trends and socio-demographic differences in response rates: Finnish adult health behaviour survey. *European Journal of Epidemiology, 21*, 409-415. https://doi.org/10.1007/s10654-006-9019-8

Turiel, E. (1983). *The development of social knowledge: Morality and convention.* Cambridge University Press.

Turiel, E. (2015). Moral development. In *Handbook of Child Psychology and Developmental Science*, 1-39.

UNESCO. (2017). More than one-half of children and adolescents are not learning worldwide. *UIS Fact Sheet, 46*. https://uis.unesco.org/sites/default/files/documents/fs46-more-than-half-children-not-learning-en-2017.pdf

Vozzola, E. C. (2014). *Moral development: Theory and applications*. Routledge.

Woida, K. L. (2023, January 18). Education in Ancient Greece: A comprehensive summary. *Crunch Learning*. https://crunchlearning.com/education-in-ancient-greece/

Zizek, B., Garz, D., & Nowak, E. (Eds.). (2015). *Kohlberg revisited*. Springer.