

Full Length Research Paper

Examining the relationship between pre-service teachers' ethical reasoning levels and their academic dishonesty levels: A structural equation modelling approach

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Accepted 2 October, 2011

Academic dishonesty has recently been described as an epidemic illness and a phenomenon to be definitely prevented. Accordingly, prospective teachers are expected to have high ethical judgement levels. The section who suffers most from academic dishonesty is also teachers who serve in various ranks. Individuals with high ethical judgement levels are expected to have low dishonesty levels. In this sense, ethical judgement levels are thought to have a predictor effect on academic dishonesty levels. In this study, the data is collected from 1553 prospective teachers in two universities. The results of the study have supported the hypotheses that ethical judgement levels, genders and accommodations of prospective teachers significantly predict their academic dishonesty levels while the hypothesis that universities, departments and class levels of prospective teachers have a significant effect on their academic dishonesty levels is proven wrong.

Key words: Academic dishonesty, ethical reasoning, prospective teacher.

INTRODUCTION

Academic dishonesty has appeared as a common case in educational institutions which is in the most unwanted behaviours' list. Studies conducted in this field have demonstrated that academic dishonesty is a problem existing in every educational level and degree (Davis et al., 1992; Brown and Emmett, 2001; Bolin, 2004; Brown and Choong, 2005; Grijalva et al, 2006; McCabe and Treviño, 1997; Murdock and Anderman, 2006; Valerie et al, 2001; Williams and Hosek, 2003).

Teaching, which is a guided profession by normative principles, includes many ethical issues (Strike, 1988 cited in Aksoy, 1999). Students are required to have ethical judgement skills while examining ethical issues. Ethical decision-making acts in situations that individuals face can be developed by formal education, which makes it necessary for students to find out solutions to unethical problems during their formal education periods (Brown

and Choong, 2005). Thus, ethical judgement is considered a process which must be taught to students in educational institutions (Menzel, 2009).

Students' viewpoints and their assessments about ethical issues are directly related to the cultural structure of the society in which they live. Culture is defined as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980 cited in Tsui and Windsor, 2001: 145).

Chan and Elliott (2004 cited in Eren, 2009:72) have found out in their study that the effect of culture on pre-service teachers' conceptions about teaching and learning is important. Winber (2006 cited in Mpeli and Monnapula-Mapesela, 2009: 3) defines ethics as an outcome of a systematic reflection on morality and values, which implies that for a person to engage in ethical learning, they must find ways to reflect on values,

habits and conducts that are embedded in culture.

Academic dishonesty

Academic dishonesty can be defined as a behaviour that breaches “the submission of work for assessment that has been produced legitimately by the student who will be awarded the grade, and which demonstrates the student’s knowledge and understanding of the context or processes being assessed” (Lambert et al., 2003: 98).

Reasons that impel students to academic dishonesty can be divided into two categories: a- studies focusing on situational and institutional, b- studies focusing on students’ individual features (Cummings et al., 2002: 286).

According to McCabe et al. (2002), academic dishonesty is related to “cheating culture”. That is, seeing others cheating might cause students to think of cheating as normal.

Academic dishonesty has been discussed with various dimensions by researchers such as Iyer and Eastman (2008) and Eastman et al., (2008). According to Rawwas and Isakson (2000), academic dishonesty consists of four items which are “receiving and abetting academic dishonesty” (items perceived as unethical and initiated by the student), “obtaining an unfair advantage” (items in which students take advantage of a situation not of their creation), “fabricating information” (items that may not be clearly perceived as unethical) and “ignoring prevalent practices” (items that students may see as permissible and ethical). On the other hand, another view explains the term “academic dishonesty” through two dimensions. The first is “plagiarism” regarding written tasks and the second is “cheating” act regarding tests (Roig and DeTommaso, 1995; Ferrari 2005; Iyer and Eastman, 2008).

Academic dishonesty is a common phenomenon in secondary schools, high schools and colleges (Schab, 1991; Anderman and Midgley, 2004). Studies which have been conducted up to now in this field indicate that academic dishonesty level is gradually increasing.

In a study conducted in 1941 (Drake, 1941; cited in Bolin, 2004), certain kind of academic dishonesty and cheating among students in undergraduate level was reported to reach 23%. As a result of a study conducted by the California Department of Education in 1987, cheating was described as “an epidemic illness” and it was stated that the ratio of students cheating in school tasks at middle schools in California was 75% (Schab, 1991).

In the Institute’s 2002 survey on 12,474 high school students; cheating, lying, and stealing were observed to have increased alarmingly. Among the findings of the survey were that the students who admitted to have cheated in an exam jumped from 61% in 1992 to 71% in 2000, which became 74% in 2002 (Clowes, 2004).

Many colleges and universities intend to fight against academic dishonesty, the first step of which is to determine the current situation (Kidwell et al., 2003). Past studies on academic dishonesty focused on individual differences such as gender, weighted average grade, work ethic, etc to predict the cheating behaviours and on research and the examination of contextual factors such as honour codes, faculty responsibilities about cheating, sanctions, social learning, etc at institutional level (McCabe and Treviño, 1993; McCabe et al., 2008; Murdock and Anderman, 2006; Teodorescu and Andrei, 2009).

Researchers who conduct studies focusing on individual differences claim that every single student has tendencies to cheat which are closely related to certain personal characteristics. It has been found out that variables such as gender, age, academic achievement, parents’ education and participation in extracurricular activities have an important influence on academic dishonesty (Teodorescu and Andrei, 2009).

Ethical reasoning

Cheating is admitted by students to be a common and desired phenomenon, which shows the necessity to examine various variables that are considered to have an effect on academic dishonesty. Ethical judgement, which is among those variables, is a part of philosophy of ethics. According to Churchill (1982; 297), ethics is a systemic rational reflection of human behaviours.

Ethical judgements and moral behaviours become easier by ethical reasoning, which reflects the priorities of cognitive development in shaping judgements and behaviours. Therefore, the development level of a person’s ethical judgement also reveals ethical reasoning tendencies s/he has (Cheung, 1999).

Ethics can be defined as the questioning of moral principles and nature of ethics referring to moral judgements, standards and rules of behaviours (Thong and Yap, 1998). Ethics is interested in constitutions of principle systems to help to distinguish good and bad, or right and wrong (Getz, 1990). Behaviours of an individual are the reflections of his/her moral values by which his/her ability to make rational choices providing ethically rightful behaviours are improved (Folse, 1991).

Curriculum and courses held via these curriculums play a crucial role in shaping students’ moral values. In this respect, teaching ethics aims to promote the maturity of students in a wide range of ethical functions including ethical judgement, moral life and ethical behaviours (De Hann et al., 1997).

Development of students’ ethical judgement capacities is vital both to pursue and to create an ethical life (Paul and Elder, 2009). This facilitation will reflect the priorities of cognitive development in shaping judgement and behaviour. Therefore, development level of a person’s

ethical reasoning also reveals ethical judgement tendencies s/he has (Cheung, 1999).

Theorists like Dewey (1960), Piaget (1965) and Kohlberg (1971) consider ethical thinking process as an important aim of education and so, of teacher education. (Cited in Lampe, 1994). In this context, especially Kohlberg's (1981) moral development theory is the most commonly used theory to examine the individuals' ethical judgement abilities. According to the theory, ethical judgement is a measure of attention to be shown ideally to solve an ethical dilemma and it expresses the structure of an individual's developed cognitive morality used potentially (Thorne, 2000; Ho, 2009).

Consequential moral theory suggests that acts and instinct of a person can be evaluated solely within their own goodness of consequences. Contrary to this, deontological (rule-based) theory claims that acts and instincts of a person are not directly linked to their consequences but to their adherence to moral rules (Getz, 1990; Nixon, 1994; Thong and Yap, 1998; Kenny et al, 2010).

Human emotions are an inseparable part of our ethical lives and values, and judgements are in the centre of decision-making processes. In order to think out what the possible consequences will be when making an ethical decision in any case, we have to learn how to use our moral imaginations. Therefore, ethical judgement must be a process which is both educable and learnable (Menzel, 2009: 246).

Rules in ethical judgements begin with knowledge of moral codes and then include other views which help clinicians solve their ethical issues. Systemic ethical judgement process tries to help individuals (a) understand their own value systems, (b) realize an ethical problem when it emerges, (c) examine the problem carefully, (d) search for advices and knowledge of others in a proper way and use them, (e) identify the precautions to be taken, (f) think of and choose the possible acts and (g) evaluate the consequences (Gutman, 2005).

Objectives and hypothesis

According to Ferrel and Daniel (1995), a student who does not respect ethical behaviours would not respect ethical behaviours in his personal and professional relationships in the future. Human emotions form an inseparable part of our ethical lives. Values and judgements are in the centre of decision making processes.

Ethical judgement levels play a crucial part in social life through helping individuals serve their societies both nationally and universally and helping social dynamics be transferred to future generations. Lately, academic dishonesty has been described as an epidemic disease and a phenomenon to be prevented. One of the duties of teachers is, although it changes according to where they serve, to cultivate future generations in accordance with the demands and expectations of their societies.

Pre-service teachers are expected to have a high ethical judgement level. Some studies carried out in this field have focused on ethical behaviours of students of pre-service teacher education (Daniel et al., 1991; Ferrell and Daniel, 1995).

Teachers who serve in various branches are the ones who suffer from academic dishonesty most. Individuals with high ethical judgement levels are expected to have low dishonesty levels. In this sense, an ethical judgement level is thought to have a predictor effect on academic dishonesty level. In addition to this, because there is no one cause of any phenomenon in social sciences and because it is thought that there are many factors influencing dishonesty level, effects of various variables on academic dishonesty level also form the aims of this research. The main objective of this research based on all these facts is to examine the effects of ethical judgement levels of pre-service teachers over academic dishonesty levels.

Research hypotheses in accordance with the objective of the study have been developed as following;

- 1) Ethical judgement levels of pre-service teachers are a meaningful predictor of their academic dishonesty levels.
- 2) The universities where the pre-service teachers study have effects on their ethical judgement levels.
- 3) The departments where the pre-service teachers study have effects on their academic dishonesty levels.
- 4) Genders of pre-service teachers have effects on their academic dishonesty levels.
- 5) Class levels of pre-service teachers have effects on their academic dishonesty levels.
- 6) Accommodations of pre-service teachers throughout their study period have effects on their academic dishonesty levels.

METHODOLOGY

Participants

The participants of the research are pre-service teachers who are studying at the departments of Elementary Education and Social Studies Education at Gazi University and Ahi Evran University. The data regarding participants are given in Table 1.

According to Hair et al. (1998: 604) each parameter in the scale is required to be answered by at least ten participants in order to calculate sufficient sample size in which data demonstrate normal distribution. Hoyle (1995) states that minimum sample size for confirmatory factor analysis should be 250 people or more. Şimşek (2007) states that minimum sample size should be $k(k+1)/2$ (k denotes the number of variables). Normal distribution of this study, as the data was collected from 1553 participants, meets such standards.

Measures

Ethical judgment scale

The scale (Mach IV) used by Richmond (2001) to measure ethical judgement, which is adapted to Turkish by Kılıç and Önen (2009),

Table 1. The data regarding the participants.

University	Grade		Gender		Department		Total
			Male	Female	Social studies education	Elementary education	
Ahi Evran University	1	n	80	128	87	121	208
		%	38.5	61.5	41.8	58.2	100
	2	n	80	136	98	118	216
		%	37.0	63.0	45.4	54.6	100
	3	n	56	68	55	69	124
		%	45.2	54.8	44.4	55.6	100
	4	n	53	78	42	89	131
		%	40.5	59.5	32.1	67.9	100
	Total	n	269	410	282	397	679
		%	39.6	60.4	41.5	58.5	100
Gazi University	1	n	60	140	142	58	200
		%	30.0	70.0	71.0	29.0	100
	2	n	59	112	103	68	171
		%	34.5	65.5	60.2	39.8	100
	3	n	69	155	126	98	224
		%	30.8	69.2	56.3	43.8	100
	4	n	101	178	104	175	279
		%	36.2	63.8	37.3	62.7	100
	Total	n	289	585	475	399	874
		%	33.1	66.9	54.3	45.7	100

was used after the permission of the researchers who made the adaptation. Turkish version of ethical judgement scale is composed of 13 items. In the five-point likert scale; "strongly agree", "agree", "undecided", "disagree" and "strongly disagree" are given 5 point, 4 point, 3 point, 2 point and 1 point respectively. Negative items are reversely graded. The variance ratio stated in the Turkish version of the scale is 53.49% and Cronbach alpha value, which is the coefficient for internal consistency, is founded 0.66 (Kılıç and Önen, 2009).

Academic dishonesty scale

Academic dishonesty scale, which is composed of 22 items was developed by Eminoğlu and Nartgün (2009) to measure academic dishonesty levels of undergraduate students. In the five-point likert scale, while "strongly agree", "agree", "undecided", "disagree" and "strongly disagree" are graded 5, 4, 3, 2 and 1 point respectively; negative items are reversely graded. Variance ratio explained with four dimensions of the scale is 53.157% and the coefficient for internal consistency is found 90 for the whole scale. (Eminoğlu and Nartgün, 2009).

Findings regarding exploratory factor analyses and reliability levels of ethical judgement and academic dishonesty scales

In order to figure out whether both scales are applicable for the exploratory factor analysis, KMO and Barlett tests are applied. In this scope, the result of the KMO test should be 0.60 or higher and the result of the Barlett's test of sphericity needs to be statistically significant (Büyükoztürk, 2010). At the end of this study, the KMO test result of ethical judgement scale is found 0.687, and the KMO

test result of academic dishonesty scale is figured out as 0.906. Barlett's test of sphericity is found significant for both scales at ($P < 0.01$) level and it is deduced that an exploratory factor analysis can be used over the scales.

In the exploratory factor analysis, the minimum acceptable value for a factor loading in which items are included is taken 0.30, and maximum likelihood analysis method and direct oblimax technique of rotation techniques are used in order to find the items having high correlations with factors and to interpret the factors more easily. Findings regarding the exploratory factor analysis of the ethical judgement scale and the findings regarding the academic dishonesty scale are presented in the Tables 2 and 3 respectively.

At the end of the factor analysis conducted on the ethical judgement scale, five items which are not included in any factor or have a loading value below 0.30 are excluded from the scale and three factors are assessed. These three factors explain 33.89, 21.88 and 16.38% of the whole variance regarding the scale respectively. The sum of the factor dimensions of the scale explains 72.15% of the scale. Within this scope, it is attempted to name the factors regarding the items which the scale has dimensioned. Accordingly, these three factors are named as honesty, ethic within relations, and personal interest respectively.

At the end of the factor analysis conducted on academic dishonesty, three factors are assessed. These three factors explain 28.03, 10.63 and 7.70% of the total variance regarding the scale respectively. The sum of the scale's factor dimensions explains 52.65% of the scale. It is tried to name the factors by considering the names of the dimensions in the original scale. Accordingly, these factors are named as dishonesty during researching and reporting, dishonesty regarding references (plagiarism), cheating tendency, dishonesty in studies like homework and projects respectively.

Table 2. The results of factor analysis for the ethical judgment scale.

Item No	Factor covariance	Factor-1 loading	Factor loadings after rotation			Corrected item-total correlation	Cronbach's alpha level
			Factor -1	Factor -2	Factor-3		
em1	0.893	0.942	0.948			0.707	0.826
em2	0.561	0.749	0.746			0.707	
em13	0.576			0.758		0.647	0.803
em11	0.547			0.745		0.639	
em3	0.481			,696		0.604	
em5	0.438			0.650		0.582	
em6	0.616				0.782	0.527	0.690
em8	0.466				0.679	0.527	

Cronbach's alpha coefficient for the entire scale was found to be 0.688.

Table 3. The results of factor analysis for the academic dishonesty scale.

Item No	Factor covariance	Factor-1 loading	Factor loadings after rotation				Corrected Item-total correlation	Cronbach's alpha level
			Factor-1	Factor-2	Factor-3	Factor-4		
as17	0.570	0.724	0.769				0.660	0.832
as18	0.521	0.694	0.722				0.640	
as16	0.451	0.680	0.670				0.592	
as21	0.405	0.616	0.595				0.594	
as15	0.418	0.598	0.572				0.577	
as23	0.365	0.585	0.539				0.541	
as14	0.267	0.559	0.493				0.474	
as20	0.160	0.555	0.429				0.360	
as10	0.234	0.548	0.371				0.430	
as25	0.637	0.539		0.780			0.642	
as22	0.551	-0.478		0.710			0.617	0.772
as24	0.433	0.447		0.675			0.562	
as2	0.722	0.442			-0.836		0.741	0.841
as1	0.633	-0.412			-0.759		0.706	
as3	0.608	-0.384			-0.744		0.700	
as5	0.377	-0.375			-0.516		0.561	
as12	0.542	-0.371				0.729	0.602	0.756
as11	0.407	-0.342				0.622	0.533	
as9	0.378					0.615	0.504	
as13	0.340	-0.420				0.582	0.500	
as19	0.244	-0.388				0.449	0.430	
as4	0.260					0.426	0.422	

Cronbach's alpha coefficient for the entire scale was found to be 0.671.

Cronbach alpha coefficients are calculated to assess the findings regarding the reliability of the scale. The coefficients are measured 0.688 in the whole ethical judgment scale, 0.826 in honesty sub dimension, 0.803 in sub dimension of ethics within

relations and 0.690 in personal interest sub dimension. For the findings regarding the reliability of the academic dishonesty scale, the coefficients are calculated 0.671 in the whole scale; 0.832 in the sub dimension of dishonesty during researching and reporting;

0.772 in the plagiarism sub dimension; 0.841 in the sub dimension of cheating tendency and 0.756 in the sub dimension of dishonesty in studies like homework and projects. Tezbaşaran (1997) states that reliability co-efficiency has to be as close to 1 as possible in order to be sufficient in a likert scale. According to these results, it can be said that the scale is highly reliable. Considering exploratory factor analysis and internal consistency, co-efficiencies of ethical judgement and academic dishonesty scales whose exploratory factor analyses are conducted by SPSS 15.0 program and whose factor structures are identified, it is concluded that each scale is valid and reliable in terms of the items assessed.

Findings regarding confirmatory factor analysis and reliability levels of ethical judgment and academic dishonesty scales

Second-order confirmatory factor analysis of ethical judgement and academic dishonesty scales is analysed through AMOS 6.0 and maximum likelihood method is used in the analyses. In studies with structural equation modelling, considering the importance of theories, second-order modelling becomes more significant (Şimşek 2007). Therefore, the second-order confirmatory factor analysis is applied to the scales.

After the modifications, which the Amos 6.0 program has predicted and is acceptable theoretically between margin of errors, the result of second-order confirmatory factor analysis applied to the academic dishonesty scale is calculated Chi-Square (χ^2) as 554,684 and degrees of freedom (df) as 200, and modelling is statistically significant ($P < 0.01$). In considering minimum modifications among margin of errors the program predicted, the second-order confirmatory factor analysis regarding academic dishonesty is as shown in the Table 4.

When the figures in Table 4 are examined, it is seen that the dimensions assessed by the exploratory factor analysis are confirmed in both scales. The standardized regression weights of the items in the factors are observed as very high and the factors of the items are found statistically significant. At the end of the confirmatory factor analysis, it is reported that the reliability of structure for the first, second and third factors are measured as 0.82, 0.82 and 0.68 respectively and explained variances are 0.70, 0.53 and 0.52 respectively. The reliability of structure for the first, second, third and fourth factors are measured 0.90, 0.77, 0.84 and 0.81 respectively, and explained variances are 0.51, 0.53, 0.58 and 0.52 respectively. According to Hair et al. (1998) and Şimşek (2007), the reliability of structure and explained variance has to be 0.50 or more. In the light of such findings, it is assessed that the dimensions detected are valid, reliable and relevant to the factors. Goodness of fit index regarding the second-order confirmatory factor analysis of the scales is shown in Table 5.

The value which tests the statistical fit of the proposed model and analyzed sample in the confirmatory factor analysis is the χ^2 value (Schumacker, 2004). χ^2 tests whether covariance matrix regarding population equals to covariance matrix applied in the model. However, because this value is sensitive to sample size and a high χ^2 value can be measured in multi-element samples, χ^2/df value corrected through degree of freedom (df) is considered to be more proper to be used (Bagozzi, 1981). In this study, χ^2/df value assessed regarding the ethical judgement scale is measured as 2,763 and χ^2/df value assessed regarding the academic dishonesty level is measured 2,773. This result indicates that the model is statistically significant. In addition to this, IFI value, which is not included in the table and which takes both sample size and complexity in the model into consideration, portrays a good fit by indicating 0.95 and more (Şimşek, 2007). In this study, the IFI value assessed regarding the ethical judgement scale is found 0.992 and the IFI value assessed regarding academic dishonesty scale is measured 0.967, which indicates a good fit.

According to the goodness of fit index regarding the model shown in the Table 5, values of RMSEA, NFI, CFI, GFI and AGFI are found at a good fit level. This situation indicates that the dimensions assessed by the result of exploratory factor analysis are confirmed by the results of confirmatory factor analyses regarding both of the scales.

Analysis of the measurement model

In this work, Amos 6.0 and the model of maximum likelihood that is formed for two continuous variables (ethical judgement and academic dishonesty) are used. Variables are analyzed through multiple indicators and multiple causes (MIMIC) model in order to examine the effects of the categorical variables over continuous variables. Lisrel 8.71 (linear interdependent structural relationship) is used in data analysis. MIMIC model is a special application of LISREL that is developed with the intention of prediction in cases where dependent variable is unknown (Baldemir et al., 2009; Joreskog, 2002).

In the cases where assumption of normality is not satisfied or where data is categorical, the use of covariance matrix is recommended and Weighted Least Square or Diagonally Weighted Least Square methods are suggested to be used in order to make calculation based on covariance matrix (Şimşek, 2007). In this study, both ordinal and continuous variables are used together and, by forming asymptotic covariance matrix, variables are analyzed with the help of Diagonally Weighted Least Square method.

RESULTS AND DISCUSSION

In the model that is formed for Hypothesis 1; the Chi-Square (χ^2) is calculated 1056,250 and the degree of freedom (df) is measured 384 after the modifications which are theoretically acceptable between margin of errors and which are predicted by the Amos 6.0 program, and modelling is found statistically significant ($P < 0.01$). In the model, values are figured out as above: χ^2/df 2,751; RMSEA 0,034; NFI 0,930; CFI 0,954; GFI 0,955; AGFI 0,946; and IFI 0,955. According to results of goodness of fit on the Table 5, the values of NFI and CFI can be accepted, but others are suitable in the circle of goodness of fit. It means that model is accepted.

In the model that is drawn for other hypothesis, Chi-Square (χ^2) 43,97; degrees of freedom are figured out as 16 and model is statistically significant ($P < 0.01$). In the model, values are figured out as such: χ^2/df 2,748; RMSEA 0,034; NFI 0,98; CFI 0,98; GFI 0,98; AGFI 0,94; and IFI 0,98. According to the results of goodness of fit on the Table 5, all variables are in the circle of goodness of fit, which means that the model is accepted. Data about the formed models are presented on Table 6.

When figures in Table 6 are examined, the hypotheses that ethical judgement, gender and accommodation of pre-service teachers are effective on academic dishonesty levels are supported. Nevertheless, the hypotheses that universities, departments and classes of pre-service teachers are predictive over academic dishonesty levels are rejected.

Lim and See (2001) put forward in their work that plagiarism is so widespread, that even cheating in quiz is

Table 4. The confirmatory factor analysis results regarding ethical judgment and academic dishonesty.

Scale	Dimensions	Items	Standardized regression weights	t	p	
Ethical judgement	Honesty dimension ($\rho\eta = 0,82^*$, $\rho V_{C(n)} = 0,70^{**}$)	ej2	0.715	---	---	
		ej1	0.949	35.603	0.000	
	Dimension of ethics within relations ($\rho\eta = 0,82^*$, $\rho V_{C(n)} = 0,53^{**}$)	ej13	0.717	---	---	
		ej11	0.773	22.657	0.000	
		ej5	0.671	21,854	0.000	
		ej3	0.765	18.716	0.000	
	Personal interest dimension ($\rho\eta = 0,68^*$, $\rho V_{C(n)} = 0,52^{**}$)	ej8	0.682	---	---	
		ej6	0.755	11.528	0.000	
	Academic dishonesty	Dimension of dishonesty during researching and reporting ($\rho\eta = 0,90^*$, $\rho V_{C(n)} = 0,51^{**}$)	ad10	0.820	---	---
			ad14	0.650	14.812	0.000
ad15			0.654	16.662	0.000	
ad16			0.641	16.360	0.000	
ad17			0.726	17.251	0.000	
ad18			0.714	17.208	0.000	
ad20			0.742	11.445	0.000	
ad21			0.633	16.436	0.000	
ad23			0.613	16.106	0.000	
Dimension of plagiarism ($\rho\eta = 0,77^*$, $\rho V_{C(n)} = 0,53^*$)		ad22	0.746	---	---	
		ad24	0.641	21.521	0.000	
		ad25	0.800	22.356	0.000	
Dimension of cheating tendency ($\rho\eta = 0,84^*$, $\rho V_{C(n)} = 0,58^*$)		ad1	0.798	---	---	
		ad2	0.840	34.258	0.000	
		ad3	0.782	31.494	0.000	
Dimension of dishonesty in studies like homework and projects ($\rho\eta = 0,81^*$, $\rho V_{C(n)} = 0,52^*$)		ad5	0.615	24.034	0.000	
		ad4	0,752	---	---	
		ad9	0.769	15.420	0.000	
	ad11	0.640	15.753	0.000		
	ad12	0.733	16.571	0.000		
		ad13	0.574	15.085	0.000	
		ad19	0.487	13.742	0.000	

* $\rho\eta$: Construct reliability = $(\sum \text{standardized loadings})^2 / (\sum \text{standardized loadings})^2 + \sum \text{error}$; ** $\rho V_{C(n)}$: Variance extracted = $\sum (\text{standardized loadings})^2 / \sum (\text{standardized loadings})^2 + \sum \text{erro}$ (Hair et al., 1998 : 612)

a more serious matter and that almost all of the students have cheated at least once. Stearns (2001) focuses on the effects of educational behaviours of students on their academic dishonesty and claims that approximately 20% of students have cheated at least once and that academic dishonesty is affected by educational behaviours at low degree. According to the results of

these researches, academic dishonesty is a very widespread problem and should be precluded, and this case is influenced by educational behaviours at low degree.

After determining the current situations of students in academic dishonesty (cheating, plagiarism, etc.), it is required to reveal the academic dishonesty cases and

Table 5. The goodness of fit index regarding the model constructed in the scales of ethical judgment and academic dishonesty*.

Fit measure	Good fit	Acceptable fit	Ethical judgment	Academic dishonesty
RMSEA	$0 < \text{RMSEA} < 0,05$	$0.05 \leq \text{RMSEA} \leq 0.10$	0.034	0.034
NFI	$0.95 \leq \text{NFI} \leq 1$	$0.90 \leq \text{NFI} \leq 0.95$	0.988	0.950
CFI	$0.97 \leq \text{CFI} \leq 1$	$0.95 \leq \text{CFI} \leq 0.97$	0.992	0.967
GFI	$0.95 \leq \text{GFI} \leq 1$	$0.90 \leq \text{GFI} \leq 0.95$	0.993	0.968
AGFI	$0.90 \leq \text{AGFI} \leq 1$	$0.85 \leq \text{AGFI} \leq 0.9$	0.984	0.959
χ^2/df	$0 < \chi^2/\text{df} < 3$		44.204 / 16 = 2.763	554.684 / 200 = 2.773

*Schermelleh-Engel ve Moosbrugger (2003: 23-74).

Table 6. Data about hypothesis.

Hypothesis	Path	Path coefficient	t- value	Results
H1	Ethic → academic	0.13	2.079*	Supported
H2	UNIV → AD	0.22	1.65	Rejected
H3	DEPART → AD	0.17	1.91	Rejected
H4	GND → AD	0.25	3.96*	Supported
H5	GRADE → AD	-0.01	-0.27	Rejected
H6	ACM → AD	-0.10	-2.21*	Supported

* $p < 0.05$.

the reasons forcing students into academic dishonesty (Kidwell et al., 2003). In this study, to present factors predicting academic dishonesty is significant also in terms of measures to prevent it in the field.

Valerie et al. (2001) studied on the definition, frequency and volume of dishonesty in university. The results of research have revealed that the development of academic morality will reduce academic dishonesty. The findings of the study by Valerie et al. (2001) and the findings of this study do not match with each other. When the situation in university is taken into account, it is clear that studying as a variable in different universities or different levels of classes cannot predict academic dishonesty.

Conclusion

In this study, it seems that ethical judgement levels of pre-service teachers are effective on the prediction of academic dishonesty. Ho (2009), in his study, has figured out that there is an important relationship between ethical judgement capabilities and belief, but he could not figure out any important differences between ethical judgement and having different beliefs. In order to reduce the degree of academic dishonesty, one of the most important discoveries of research is to underline ethical judgement. When the fact that one of the factors that affect the level of ethical judgement is belief (whichever it is) is

considered, it is seen that to increase belief will augment the level of ethical judgement and thus academic dishonesty will decrease.

However, according to Cummings et al. (2001: 145), many teacher education programs have not yet incorporated the moral aspects of teaching into their curricula.

For further studies, researchers are suggested to make comparative researches on how accommodations of students should be arranged and to find out the effects of gender on academic dishonesty in order to increase the level of ethical judgement.

In further studies in this field, value teaching approaches should be incorporated into the process and various dimensions of the effect of ethical judgement on academic dishonesty should be examined to increase students' ethical judgement levels.

It is known that academic dishonesty is a learned ability or skill rather than being innate. Therefore, finding out the starting point of the reasons causing academic dishonesty will provide significant findings for further studies.

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