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COGNITIVE DISTORTIONS AMONG STUDENTS OF THE COLLEGES OF EDUCATION FOR HUMANITIES AND PURE SCIENCES IN LIGHT OF SOME VARIABLES

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ABSTRACT

The present study examined the level of cognitive distortions among students of the College of Education for Humanities and the College of Education for Pure Sciences at the University of Mosul and tested differences according to academic specialization, gender, and academic year. A stratified random sample of 160 students from the second and fourth years was selected during the academic year 2025–2026. The researcher adopted Al-Tarawneh's (2023) 50-item Cognitive Distortions Scale. Face validity was established through 13 expert judges with 100% agreement, and test-retest reliability on 40 students yielded a coefficient of 0.81. Data were analysed using SPSS, Pearson's correlation coefficient, the one-sample t-test, and the independent-samples t-test. The overall mean score ($M = 151.27$, $SD = 18.83$) did not differ significantly from the hypothetical mean of 150 ($t = 0.86$). No statistically significant differences were found by academic specialization ($t = 1.74$) or gender ($t = 1.85$). A statistically significant difference emerged by academic year ($t = 3.15$), with second-year students ($M = 155.80$) scoring higher than fourth-year students ($M = 146.17$). The findings indicate that cognitive distortions remained near the scale midpoint and were lower among students at the more advanced academic level.

Keywords: Cognitive distortions, University students, Academic specialization, Gender, Academic year.

1 INTRODUCTION

Cognitive distortions are systematic errors in information processing that can shape how individuals interpret events, evaluate themselves and others, and respond emotionally and behaviourally (Beck et al., 2015; Celniker et al., 2022). University students may encounter such patterns while adapting to academic and social demands. Accordingly, this study examines the level of cognitive distortions among students of the Colleges of Education for Humanities and Pure Sciences at the University of Mosul and tests differences according to academic specialization, gender, and academic year, with implications for educational guidance and counselling.

1.1 Research Problem

Education plays a central role in the development of societies, and the university stage is particularly important because of its influence on students' future roles and contributions. Among the psychological problems that may affect university students are cognitive distortions, which arise from negative automatic thoughts unsupported by evidence and may lead to inaccurate interpretations and inappropriate responses. Common forms include catastrophizing, all-or-nothing thinking, and emotional reasoning. Such distortions are considered an obstacle to healthy psychological functioning and may occur in varying degrees among individuals (Celniker et al., 2022, p. 1).

Cognitive theory emphasizes that distorted thinking influences emotions and behaviour and may contribute to psychological difficulties (Al-Zahrani, 2019, p. 604; Abu Hilal, 2020, p. 156). Cognitive distortions may be associated with familial, social, biological, and environmental influences, as well as peer relations, parental treatment, and social upbringing (Oner & Kaya, 2016, p. 562; Al-Lahyani & Al-Otaibi, 2021, p. 19). They may appear through overgeneralization, magnification, minimisation, dichotomous thinking, catastrophizing, personalization, and selective abstraction (Oscar, 2016, p. 21).

These distortions reflect erroneous or exaggerated interpretations of reality resulting from incomplete or inappropriate cognitive schemas, which may affect students' judgement, adjustment, and ability to deal effectively with academic and social situations (Al-Jubouri & Hafiz, 2019, p. 167).

The importance of examining this problem is strengthened by recent studies conducted at the University of Mosul. AL-Ogaidi and Al-Dulami (2025) found that second-year university students exhibited twisted and radical thinking, with a strong positive relationship between the two patterns (AL-Ogaidi & Al-Dulami, 2025, p. 8). AL-Ogaidi (2026d) also reported elevated twisted thinking among young university students, linking it to academic expectations and competitive environments that may foster catastrophic and negatively filtered thoughts (AL-Ogaidi, 2026d, p. 3985). Since twisted thinking and cognitive distortions share a common basis in distorted information processing, examining cognitive distortions among students of colleges of education is particularly important, as these students are future teachers.

Accordingly, the problem of the present study is summarised in answering the following questions:

- What is the level of cognitive distortions among students of the Colleges of Education for Humanities and for Pure Sciences at the University of Mosul?
- Are there statistically significant differences in cognitive distortions according to academic specialization?
- Are there statistically significant differences in cognitive distortions according to gender?
- Are there statistically significant differences in cognitive distortions according to academic year?

1.2 Significance of the Study

The university student is among the most important human resources possessed by any society, being one of the most significant productive forces of the future; indeed, the success of any society is measured by the extent to which it invests in these resources. Preparing such resources requires that the university student possess a measure of social, personal and academic adjustment to the academic environment. Given the chronological level of these students and the sensitivity of this transitional period, they may be affected by certain erroneous beliefs and distorted ideas, or what are known as cognitive distortions, which impede the individual's perception and consequently his sound judgement and appropriate decision-making; for in such a state the person harbours prior negative judgements concerning the situation, latent negative motives, and information not governed by logic (Mustafa & Khalifa, 2022, p. 25).

Cognitive distortions lead the individual to interpret events negatively without any realistic foundation, and may exert a considerable adverse effect upon his behaviour and emotions in a manner affecting his quality of life. They likewise render him incapable of enjoying his life owing to his inability to control such distorted thoughts, so that he experiences frustration and an inability to confront life stressors. They further contribute to deficiencies in the performance of mental functions, weakness in the capacity to render sound judgements, responding to situations inappropriately, arousing the desire for aggression and anger, and unseemly dealings with others. It is therefore incumbent to understand the phenomenon of cognitive distortions in all its aspects and to treat it so as to limit its adverse effects (Kamil, 2000, p. 67).

Cognitive distortions constitute one of the fundamental constructs in Beck's cognitive theory, referring to the erroneous meanings and ideas the individual forms concerning a situation, which do not represent the components of actual reality. Beck identified three components constituting the individual's cognitive structures: automatic thoughts, intermediate beliefs, and core beliefs. Automatic thoughts represent the individual's manifest mental state, encompassing processes of encoding, attitudes, and forms of hypothetical conceptions held by individuals concerning

themselves, others and the surrounding world; and it is between such schemas and automatic thoughts that cognitive distortions are located (Beck et al., 2015).

The significance of the present study likewise derives from the importance of the age group it addresses, namely university students, who are passing through late adolescence with its pressures, challenges and emotional fluctuations, and who are more exposed than others to pressures of multiple sources, in a manner affecting their performance and university adjustment (Arafa, 2022, p. 67); in addition to their being students of colleges of education, upon whom will fall in the future the responsibility of building successive generations (Al-Wakil, 2023, p. 39).

The present study further comes as an extension of a line of local research concerned with measuring patterns of thinking among students of the Colleges of Education for Humanities and for Pure Sciences at the University of Mosul, within which scales of reckless thinking (AL-Ogaidi, 2025), repetitive thinking (AL-Ogaidi & Al-Salih, 2026), health thinking (AL-Ogaidi, 2026a) and intellectual gluttony (AL-Ogaidi, 2026b) have been constructed and applied, in addition to a test of contextual thinking (AL-Ogaidi, 2026c). The present study complements this line by addressing cognitive distortions in the light of variables that those studies did not treat, namely academic specialization, gender and academic year.

The significance of the study is manifested through the following:

1.2.1 Theoretical Significance

- Providing a theoretical framework concerning the variable of the study (cognitive distortions) and clarifying its various aspects, it being among the recently employed constructs, in a manner that may open horizons for further studies in this domain.
- Addressing ramified and complex constructs within the field of cognitive and psychological studies.
- Enriching the field of psychological and educational studies with a new study in this domain.

1.2.2 Practical Significance

- Providing quantitative indicators concerning the level of cognitive distortions among university students, which may be drawn upon in diagnosis and evaluation.
- Directing the attention of those concerned to the importance of taking the requisite measures to raise awareness of the harms of cognitive distortions and of the criticality of the age stage of the target group.
- Emphasising the importance of the early detection of indicators of cognitive distortions and of acquainting students and those responsible for the educational process with the consequences of their exacerbation.
- Enabling university guidance and counselling units to draw upon the findings in designing counselling programmes for reducing cognitive distortions among student teachers.
- Contributing to the formulation of plans for advancing the educational situation through identifying aspects of weakness in students' personalities.

1.2.3 Objectives of the Study

The present study aims to identify:

- The level of cognitive distortions among students of the Colleges of Education for Humanities and for Pure Sciences.
- The statistical significance of differences in cognitive distortions among the participants according to the following variables: (a) academic specialization (humanities – scientific); (b) gender (male – female); (c) academic year (second – fourth).

1.2.4 Delimitations of the Study

Spatial delimitation: the College of Education for Humanities and the College of Education for Pure Sciences at the University of Mosul.

Temporal delimitation: the academic year 2025–2026.

Human delimitation: students of both colleges of both genders in the second and fourth academic years of the morning study programme.

Substantive delimitation: the variable of cognitive distortions as measured by Al-Tarawneh's (2023) scale adopted in the study.

1.3 Definition of Terms

1.3.1 Cognitive Distortions, Defined by

- Arafa (2022): cognitive errors or deviations in thinking and illogical ideas employed by individuals automatically in interpreting life events negatively. They are influenced by personal inclinations and predispositions and by erroneous expectations, and they occasion distress and pain (Arafa, 2022, p. 72).
- Al-Tarawneh (2023): erroneous thoughts comprising illogical fallacies, overgeneralization, and the minimisation or magnification of events, together with the imparting of a personal character to them, in a manner that weakens the individual's capacity to arrive at sound inferences, particularly in unambiguous situations, thereby impeding his capacity to adapt to life stressors and to attain psychological and social adjustment (Al-Tarawneh, 2023, p. 58).

1.3.2 Theoretical definition

The researcher adopted the definition of Al-Tarawneh (2023) because his scale was used in the present study and because the definition most clearly sets out the consequences entailed by the presence of cognitive distortions among university students at the levels of psychological, social and academic adjustment.

1.3.3 Operational definition

The total score obtained by the student through his responses to the items of the cognitive distortions scale adopted in the present study, in accordance with the approved scoring key.

1.4 Theoretical Framework

1.4.1 Theories Explaining Cognitive Distortions

1.4.1.1 Theory of Aaron Beck

Beck's theory is among the most widely disseminated theories of cognitive therapy. It rests upon a theoretical foundation in psychopathology together with a set of therapeutic techniques and bodies of knowledge derived from empirical and clinical research. The term cognitive therapy was employed on account of the finding that psychological disorders frequently spring from certain errors in the individual's thinking. Beck holds that the individual's mode of thinking, his processing of the information he perceives, what he believes, and the manner in which he interprets events constitute important factors influencing the occurrence of emotional and behavioural disorders; and that depression, together with its attendant behavioural symptoms, is the product of negative thinking and cognitive distortion. Distortions and misrepresentations of facts and events arise from faulty learning during the stages of cognitive development (Al-Adili & Al-Qurayshi, 2016, pp. 92–97).

Beck proposed for cognitive distortions a model comprising four levels:

- Core beliefs: global, closed and rigid beliefs concerning the self, others and the future, developing during childhood.
- Intermediate beliefs: composed of the individual's attitudes, rules, orientations and assumptions, influencing his view of situations and his feelings and conduct.
- Cognitive schemas: the set of the individual's beliefs concerning objects and environmental phenomena, in light of which he interprets and processes information pertaining to himself and to the world around him.
- Automatic thoughts: all thoughts and images occurring suddenly within the flow of personal awareness in the manner of self-talk; they constitute the stream of thoughts and interpretations entering the mind involuntarily, without awareness or prior deliberation (Al-Shuqran & Al-Qa'oud, 2022, pp. 197–198).

Beck holds that automatic thoughts lead to cognitive distortion; that is, the interpretation of events from the individual's own standpoint, erroneous thinking founded upon one of two contradictory poles (either black or white), arbitrary illogical inference, overgeneralization to all situations on the basis of a single event, magnification and minimisation, and cognitive deficit—all of which constitute manifestations of distortion. This model rests upon the premise that the individual's thinking, what he says about himself, and his attitudes and opinions are all bound up with his behaviour (Shanduh & Muz'il, 2019, p. 425).

Beck clarified that the problem of cognitive distortions resides fundamentally in the individual's misrepresentation of the reality of facts on the basis of erroneous assumptions and mistaken information, whereby cognitive content is impaired or distorted, thus affecting his manner of interpreting events and processing information. Such distortions lead to pessimism and negativity in thinking, causing the individual to expect the worst and to focus upon his

weaknesses and failures, so that he falls victim to his distorted thoughts in the absence of any clear supporting evidence (Rawi, 2021, p. 400).

Consistent with this, the patterns by means of which the mind distorts incoming information have been delimited in the local literature as comprising catastrophic thoughts, negative filtering thoughts, thoughts dismissing evidence, and unreliable predictive thoughts, each of which drives the individual towards the darkest conclusion rather than the most plausible one (AL-Ogaidi & Al-Dulami, 2025, pp. 2–3). Certain of these patterns overlap with adjacent cognitive constructs, such as repetitive thinking, defined as a cognitive process in which ideas repeatedly return and overlap into consciousness by means of recurring stereotypical cognitive structures when the individual is confronted with disparate situations or events (AL-Ogaidi & Al-Salih, 2026, p. 6530), and reckless thinking, characterised by the dominance of intuitive processing over careful analytical thinking and by the making of hasty decisions in the light of such processing (AL-Ogaidi, 2025, p. 165). This overlap indicates that cognitive distortions do not operate in isolation from the remaining patterns of thinking possessed by the student, which lends the measurement of them among university students its justification.

1.4.1.2 Theory of Albert Ellis

Ellis holds that the person does not merely react to what occurs around him, but rather thinks and forms his conceptions in accordance with the external stimuli presented to him. The individual may be rational in his processes of thinking and perception through his capacity for sound thought, or he may be irrational, at variance with reality and with his own capacities, reflecting a series of illogical ideas founded upon erroneous expectations, predictions and generalisations that conflict to some degree with the individual's mental capacities and are unsuited to reality. This mode of thinking drives the individual towards distortion and overgeneralization, occasioning psychological disorders and disturbances in relations with others (Kariri & Mathkour, 2011, p. 98).

2 PREVIOUS STUDIES

2.1 Hassan and Salem (2021)

"Modelling the Relationships among Cognitive Distortions, Self-Handicapping, Academic Procrastination and Academic Achievement among University Students"

The study aimed to verify a causal model clarifying the relationships of influence among cognitive distortions in their dimensions (catastrophic thinking, overgeneralization, personalization, selective abstraction, minimisation and dichotomous thinking) as independent variables, self-handicapping as a mediating variable, and academic procrastination and academic achievement as dependent variables, among a sample comprising (460) male and female second-year students at the Faculty of Education, Benha University. The findings yielded direct positive effects of the dimensions of cognitive distortions upon the two dimensions of self-handicapping, and a direct negative effect upon academic achievement (Hassan & Salem, 2021, p. 585).

2.2 Nasr, Abu Al-Nour and Hulail (2023)

"Academic Burnout and Its Relationship to Cognitive Distortions among University Students"

The study aimed to reveal the relationship between academic burnout and cognitive distortions and their patterns, and the contribution of cognitive distortions to the prediction of academic burnout. The descriptive method was followed, and the sample comprised (205) male and female students at the Faculty of Education, Fayoum University. The findings revealed a significant direct relationship at the (0.01) level between the two variables; cognitive distortions accounted for (13.4%) of the variance in academic burnout; and the two patterns of exaggeration of goals and generalisation of ideas of failure were capable of predicting it with an explanatory ratio of (29.4%) (Nasr et al., 2023, p. 448).

2.3 AL-Ogaidi and Al-Dulami (2025)

"Twisted Thinking and Its Relationship to Radical Thinking among University Students"

The study aimed to reveal the level of twisted thinking and of radical thinking and the relationship obtaining between them among university students. The descriptive method was applied to a random sample comprising (400) male and female second-year students of various specializations at the University of Mosul for the academic year 2023–2024. The findings revealed that the mean score of the participants on the twisted thinking test amounted to (64.45), exceeding the hypothetical mean of (60) to a statistically significant degree, and that the mean score on the radical thinking test amounted to (103), exceeding the hypothetical mean of (80); a strong direct relationship likewise obtained between the two patterns, the correlation coefficient amounting to (0.78) (AL-Ogaidi & Al-Dulami, 2025, pp. 6–8).

2.4 AL-Ogaidi and Al-Salih (2026)

"Building and Applying the Repetitive Thinking Scale among Students of the Faculties of Education for Humanities and Pure Sciences"

The study aimed to build and apply a scale of repetitive thinking among students of the Faculties of Education for Humanities and for Pure Sciences at the University of Mosul. The sample comprised (400) male and female students selected by the stratified random method, and the scale was built in four dimensions comprising (24) items, its face validity amounting to (95%) and its reliability by the test–retest method to (0.86). The findings revealed that the mean score of the participants amounted to (55.20) with a standard deviation of (13.35), falling below the hypothetical mean of (60), which indicates that the students do not possess repetitive thinking; the researchers attributed this to the mental flexibility that enables them to adapt to the changing university environment (AL-Ogaidi & Al-Salih, 2026, p. 6537).

2.5 AL-Ogaidi (2026a)

"Building and Applying the Health Thinking Scale among the Students of the Faculties of Education for Humanities and Pure Sciences"

The study aimed to design, construct and apply a scale of health thinking among students of the Faculties of Education for Humanities and for Pure Sciences. The sample comprised (400) male and female students drawn by the stratified random method from all the academic stages, and the scale comprised (24) items distributed across the dimensions of positive outlook, intellectual flexibility, self-awareness and crisis management, its face validity amounting to (98%) and its reliability to (0.80). The findings revealed that the mean score of the participants amounted to (69.93) with a standard deviation of (17.20), exceeding the hypothetical mean of (60) to a statistically significant degree, which indicates that the students of the two colleges possess health thinking (AL-Ogaidi, 2026a, p. 2037).

2.6 AL-Ogaidi (2026c)

"Construction and Application of a Contextual Thinking Test for Students of the College of Education for Humanities"

The study aimed to construct a test of contextual thinking and to apply it to students of the College of Education for Humanities at the University of Mosul. The test comprised (25) objective items scored dichotomously, its face validity amounting to (0.96) and its reliability by the test–retest method to (0.79); it was applied to (600) students, (340) female and (260) male. The findings revealed that the mean score of the participants amounted to (12.117), which does not differ to a statistically significant degree from the hypothetical mean of the test amounting to (12.5), whereas a statistically significant difference emerged between the sexes in favour of female students (AL-Ogaidi, 2026c, pp. 1160–1161).

2.7 Comparison of the Present Study with the Previous Studies

2.7.1 Objectives

The previous studies diverged in their objectives: some sought to measure the level of cognitive distortions, whereas others sought to predict or model their relationships with other variables. The present study, by contrast, aims to identify the level of cognitive distortions among the participants and the differences therein according to specialization, gender and academic year.

2.7.2 Instrument

The previous studies varied between constructing and adopting the instrument; the present study adopted the cognitive distortions scale of Al-Tarawneh (2023).

2.7.3 Sample

The samples of the previous studies ranged between (205) and (600) participants, whereas the sample of the present study amounted to (160) male and female students.

2.7.4 Population

Certain of the previous studies were conducted upon populations differing from that of the present study, whereas the studies of AL-Ogaidi and Al-Salih (2026) and AL-Ogaidi (2026a, 2026c) were conducted upon the same population addressed by the present study, namely the students of the Colleges of Education for Humanities and for Pure Sciences

at the University of Mosul, which renders the comparison of their findings with the findings of the present study more indicative.

2.7.5 Statistical tools

The previous studies employed a variety of statistical tools according to their objectives, whereas the present study employed SPSS, Pearson's correlation coefficient, the one-sample t-test and the independent-samples t-test.

2.7.6 Findings

The researcher drew upon the findings of the previous studies in discussing and interpreting the findings of the present study.

2.8 Method of the Study

The researcher adopted the descriptive method (survey approach), given its appropriateness to the nature of the present study and to the manner of achieving its objectives.

2.9 Population of the Study

The research population is defined as all the units of the phenomenon under investigation; its delimitation constitutes the researcher's frame of reference in selecting the sample (Hamad, 2023, p. 87). The population of the present study was delimited to students of the second and fourth years in the departments of the College of Education for Humanities and the College of Education for Pure Sciences at the University of Mosul for the academic year 2025–2026, amounting to (4,129) male and female students distributed across (11) departments, of whom (1,791) were second-year students and (2,338) fourth-year students.

2.10 Sample of the Study

Following the delimitation of the population, a stratified random sample of (160) students was selected, comprising (80) from the College of Education for Humanities and (80) from the College of Education for Pure Sciences. The sample was equally distributed by gender (80 males and 80 females) and academic year (80 second-year and 80 fourth-year students). Participants were drawn from the Arabic and English Language departments in the College of Education for Humanities and the Mathematics and Computer Science departments in the College of Education for Pure Sciences, with equal representation across the study variables. This distribution is consistent with the sampling procedure adopted in previous local studies conducted on the same population (AL-Ogaidi, 2026a, p. 2032; AL-Ogaidi, 2026b, p. 900).

2.11 Instrument of the Study

In order to measure cognitive distortions, the researcher adopted Al-Tarawneh's (2023) scale, comprising (50) items, on account of its appropriateness to the nature of the study sample and its objectives, and because it possesses acceptable indices of validity and reliability in its original setting.

3 PSYCHOMETRIC PROPERTIES OF THE SCALE

3.1 Validity of the Instrument

Validity is among the most important fundamental concepts in the field of psychological measurement, constituting the first essential property that must be available in any measuring instrument (Ismail, 2004, p. 84). In order to verify face validity, the researcher submitted the scale to a panel of expert judges in the Department of Educational and Psychological Sciences numbering (13) judges, so as to ascertain the adequacy of the items and their representation of the domain assigned to them. After their observations and opinions had been taken into account, all items of the scale were accepted with an agreement ratio of (100%).

3.2 Reliability of the Instrument

Reliability denotes that the instrument possesses a high degree of accuracy, precision and consistency in the data it provides concerning the behaviour of the examinee (Majeed, 2014, p. 124). The researcher adopted the test-retest method: the scale was administered to a sample comprising (40) male and female students on 9 November 2025, then re-administered to the same sample under comparable conditions on 22 November 2025. By means of Pearson's correlation coefficient, the reliability coefficient reached (0.81), which is a good coefficient acceptable for the purposes of the study (Rabi', 2009, p. 83); the interval separating the two administrations is consonant with what has been adopted in comparable local studies, in which the scale is re-administered after (15) days (AL-Ogaidi & Al-Salih, 2026, p. 6536).

3.3 Administration of the Instrument

After the validity and reliability of the scale had been ascertained, it was administered to the principal sample comprising (160) male and female students of the second and fourth years in the Colleges of Education for Humanities and for Pure Sciences at the University of Mosul. Administration extended from 4 December 2025 to 13 December 2025.

3.4 Scoring of the Instrument

The scale comprises (50) items, each followed by five alternatives: (strongly agree, agree, neutral, disagree, strongly disagree), assigned the weights (5, 4, 3, 2, 1) respectively for positively worded items, the weights being reversed for negatively worded items. The highest score on the scale is thus (250) and the lowest (50), with a hypothetical mean of (150).

3.5 Statistical Tools

- In the statistical treatment of the data, the researcher employed the Statistical Package for the Social Sciences (SPSS), and specifically the following tools:
- Pearson's simple linear correlation coefficient: for extracting the reliability of the scale by the test-retest method (Al-Bayati & Athanasius, 1977, p. 185).
- The one-sample t-test: for comparing the sample mean with the hypothetical mean of the scale in fulfilment of the first objective.
- The independent-samples t-test: for identifying the significance of differences in cognitive distortions according to the variables of specialization, gender and academic year (Al-Manizil, 2000, p. 85).

4 RESULTS

4.1 Identifying the Level of Cognitive Distortions among the Participants

In fulfilment of this objective, and following the statistical treatment of the data, the findings revealed that the mean score of the students amounted to (151.27) with a standard deviation of (18.83). Upon comparing the sample mean with the hypothetical mean of the scale, amounting to (150), by means of the one-sample t-test, the computed t-value was found to be (0.86), which is smaller than the tabulated t-value of (1.98) at a significance level of (0.05) with (159) degrees of freedom. This indicates the absence of a statistically significant difference between the two means; that is, the level of cognitive distortions among students of the Colleges of Education for Humanities and for Pure Sciences lay at the level of the hypothetical mean and did not exceed it to a statistically significant degree, as shown in Table (1).

Table 1: Results of the one-sample t-test for the significance of the difference between the sample mean and the hypothetical mean of cognitive distortions

N	Mean	Hypothetical mean	Standard deviation	t-value		Significance at (0.05)
				Computed	Tabulated	
160	151.27	150	18.83	0.86	1.98	Not significant

Degrees of freedom = (159)

The researcher attributes this finding to the nature of social and value-based socialisation and to the traditions prevailing within society, which contribute to regulating students' modes of thinking and to restraining their tendency towards extremes in either direction; in addition to the fact that the university environment, with the academic activities it affords and the interaction with peers and instructors, provides the student with opportunities to review his ideas and to test their realism, thereby maintaining the level of cognitive distortions at the level of the mean. It is likewise possible that the mode of responding to the scale exerted an effect upon the students' inclination towards neutral responses.

This finding likewise accords with the outcomes of the studies conducted upon the same population at the University of Mosul, which have indicated that the students of the two colleges do not exhibit elevated levels of the negative patterns of thinking: the level of reckless thinking among them was found to be lower than the hypothetical mean adopted (AL-Ogaidi, 2025, p. 171), and repetitive thinking was found to be absent, its mean amounting to (55.20) as against a hypothetical mean of (60) (AL-Ogaidi & Al-Salih, 2026, p. 6537), whereas they were found to possess health thinking, characterised by a positive outlook, intellectual flexibility and self-awareness in the management of the crises they confront (AL-Ogaidi, 2026a, p. 2037). It further accords with the finding of AL-Ogaidi (2026c, p. 1160), according to which the level of contextual thinking among students of the College of Education for Humanities did not differ to a statistically significant degree from the hypothetical mean of the test. It stands at variance, however, with what was

indicated by AL-Ogaidi (2026b, p. 903) concerning the possession by the students of the two colleges of a high level of intellectual gluttony, a divergence that may be referred to the difference between the two constructs, inasmuch as intellectual gluttony proceeds from an excessive desire for knowledge whereas cognitive distortions proceed from the erroneous processing of information.

4.2 Identifying the Significance of Differences in Cognitive Distortions according to Several Variables

4.2.1 Differences according to Academic Specialization (Humanities – Scientific)

The findings revealed that the mean score of students of the humanities specialization amounted to (153.82) with a standard deviation of (20.47), whereas the mean score of students of the scientific specialization amounted to (148.72) with a standard deviation of (16.31). The computed t-value amounted to (1.74); upon comparing it with the tabulated value of (1.98) at a significance level of (0.05) with (158) degrees of freedom, the computed value was found to be smaller than the tabulated value, which indicates the absence of a statistically significant difference between students of the Colleges of Education for Humanities and for Pure Sciences, as shown in Table (2).

Table 2: Significance of the difference in cognitive distortions according to academic specialization

Group	N	Mean	Standard deviation	t-value		Significance at (0.05)
				Computed	Tabulated	
Education for Humanities	80	153.82	20.47	1.74	1.98	Not significant
Education for Pure Sciences	80	148.72	16.31			

Degrees of freedom = (158)

The researcher attributes this finding to the convergence of students' modes of thinking in the two colleges and to their subjection to the same social and cultural influences, in addition to the similarity of the university environment, the educational systems and the instructional methods adopted in the two colleges, and to the students' belonging to the same age stage, which renders their cognitive structures convergent.

4.2.2 Differences according to Gender (Male – Female)

The findings revealed that the mean score of male students amounted to (148.56) with a standard deviation of (18.83), whereas the mean score of female students amounted to (153.98) with a standard deviation of (18.14). The computed t-value amounted to (1.85); upon comparing it with the tabulated t-value of (1.98) at a significance level of (0.05) with (158) degrees of freedom, the computed value was found to be smaller than the tabulated value, which indicates the absence of a statistically significant difference between males and females, as shown in Table (3).

Table 3: Significance of the difference in cognitive distortions according to gender

Group	N	Mean	Standard deviation	t-value		Significance at (0.05)
				Computed	Tabulated	
Male	80	148.56	18.83	1.85	1.98	Not significant
Female	80	153.98	18.14			

Degrees of freedom = (158)

The researcher attributes this finding to the fact that males and females within the university environment are subject to the same stimuli and to the same educational and social experiences, and are exposed to comparable academic pressures, which renders their cognitive structures and their modes of interpreting events convergent, in addition to the convergence of the cultural and educational level of the two groups.

It stands at variance, moreover, with the finding of AL-Ogaidi (2026c, p. 1161), which revealed a statistically significant difference between the sexes in contextual thinking in favour of female students; a divergence that may be referred to the difference in the construct measured, inasmuch as contextual thinking constitutes a positive organising capacity, awareness of which and control over which may vary between the sexes, whereas cognitive distortions constitute a negative cognitive pattern to which both sexes are subject within a single university environment.

4.2.3 Differences according to Academic Year (Second – Fourth)

The findings revealed that the mean score of second-year students amounted to (155.80) with a standard deviation of (19.04), whereas the mean score of fourth-year students amounted to (146.17) with a standard deviation of (17.16). The computed t-value amounted to (3.15); upon comparing it with the tabulated t-value of (1.98) at a significance level of (0.05) with (158) degrees of freedom, the computed value was found to be greater than the tabulated value, which indicates the presence of a statistically significant difference between the students of the two years in favour of second-year students; that is, second-year students possess more cognitive distortions than fourth-year students, as shown in Table (4).

Table 4: Significance of the difference in cognitive distortions according to academic year

Group	N	Mean	Standard deviation	t-value		Significance at (0.05)
				Computed	Tabulated	
Second year	80	155.80	19.04	3.15	1.98	Significant, in favour of second-year students
Fourth year	80	146.17	17.16			

Degrees of freedom = (158)

The researcher attributes this finding to the effect of the age stage and academic experience upon modes of thinking, inasmuch as cognitive distortions diminish as the student's maturity and understanding increase. Second-year students are still in the process of adapting to the university environment and its requirements, and are less experienced in dealing with academic pressures, which renders them more susceptible to distorted thoughts such as catastrophizing, overgeneralization and dichotomous thinking. Fourth-year students, by contrast, have acquired cumulative academic and social experiences enabling them to rectify many of their unrealistic ideas, in addition to the contribution made by the courses offered in the departments of educational and psychological sciences to developing self-awareness and sound modes of thinking. In this connection, AL-Ogaidi, Abdul-Aziz and Ridha (2026, p. 241) demonstrated that structured educational programmes exert a statistically significant effect upon the development of learners' cognitive and social capacities, which lends support to the proposition that the cumulative educational experience contributes to the rectification of the student's distorted thoughts as he advances through the academic years.

5 CONCLUSION

In light of the findings arrived at by the study, the researcher reached the following conclusions:

- The level of cognitive distortions among students of the Colleges of Education for Humanities and for Pure Sciences at the University of Mosul lay at the level of the hypothetical mean of the scale and did not exceed it to a statistically significant degree.
- Academic specialization (humanities – scientific) exerted no statistically significant effect upon cognitive distortions among the participants.
- Gender (male – female) exerted no statistically significant effect upon cognitive distortions among the participants.
- Second-year students obtained significantly higher scores on the cognitive distortions scale than fourth-year students, which indicates that advancement through academic years is associated with a decline in the level of cognitive distortions.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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Disclosure of conflict of interest

The author declares no conflict of interest.

Statement of ethical approval

The study was conducted in accordance with the ethical principles applicable to educational research involving human participants at the University of Mosul.

Statement of informed consent

Participation was voluntary, and informed consent was obtained from all participants prior to data collection.

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