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***Article***

# The Role of Continuous Education in Achieving Intellectual Security in the Kingdom of Saudi Arabia

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## Abstract

The research pertained to intellectual security educational issues in the Kingdom of Saudi Arabia. The research explored the most significant concerns that could be identified within an effort to develop a strategic plan whereby it can be improved on the national level. Through the application of methodology which pertained both to quantitative as well as qualitative approaches, data was collected from a total of 178 participants, including lecturers, students, and university administrators (62.9% male, 37.1% female), along with various interviews. The data analyzed by t-tests as well as ANOVA indicated significant positive responses from continued education on all identified issues with an average mean score of 4.08, establishing an average level of importance of 81.6%. The most significant concerns identified by the participants, marked by a mean of 4.40 or average of 87.9%, information literacy, preventing intellectual deviations (4.31, or average of 86.2%), issues on culture identity, or issues on belonging (4.45, or average of 89.0%), can effectively be identified as of most significant concerns. However, it was identified that there existed a possibility of improvement since almost two-thirds of the total (63.5%) of the participants did not take part in professional improvement programs relating to intellectual security. The concerns listed included lack of financial resources (3.72), lack of intellectual motivation (3.80), or lack of willingness in branching into intellectual security through usage of social networking (3.90).

## Keywords

Program Evaluation, Policy Design, Technological Integration, Professional Development, Educational Reform.

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## Introduction

### *Research Background*

The knowledge-based economy has led modern education focusing on lifelong learning and national security. This is owing to the realization that the safeguard of intellectual property, intellectual resources, intellectual identity, or intellectual knowledge provides the foundation of national stability. The role of wise discourse has been enhanced in modern society by the inclusion of intellectual security. Educational institutions perform an important role by encouraging intellectual awareness, critical thinking, or intellectual resilience among individuals. Intellectual resilience is an important factor from the standpoints of both safeguarding intellectual properties or adapting themselves according to intellectual shocks. The initiation of lifelong learning has resulted in an enhancement of creativity, autonomy, or knowledge distribution (Alshuayl, Alkhattabi, & Ryndak, 2025). The concept of modern paradigms of lifelong education, including both structural or non-structural learning strategies, has eliminated the old concept of adult education. The concept of intellectual security faces inclusion of epistemology or intellectual safeguards, critical intellectual skills, or intellectual moderation. Recent findings show that education enhances intellectual base of society. The concept of intellectual security theory or modern philosophy of education promotes learning. The concept of learning enables the development of critical intellectual skills of an individual, intellectual realism, or intellectual autonomy (Alshammari et al., 2022).

Continuous learning improves critical thinking, self-perception, and knowledge discovery, thus improving intellectual security (Huang, Jia, & Yu). Many studies have found that lifelong learning is useful in improving intellectual autonomy, evaluative skills, and thus improving intellectual advances and security in societies. Attaining intellectual security can only be achieved by culturally competent education that enables competitiveness (Harisanty et al., 2024). Moreover, the significance of policies can be established by incorporating global knowledge into local cultures. Even though lifelong learning is fundamental in improving intellectual security, there seem to be ambiguities regarding the approaches and impacts across various settings (Wright, Sandlin, & Burdick, 2023). Most policies fail to consider intellectual security dimensions and preservation of culture, thus advocating ambiguity in most approaches of assessment (Al Zou'bi, 2022). The task of educating and protecting minds across societies that experience rapid transformation has become a challenge, more so across societies that experience tension between traditional values and modern approaches. This challenge is more common in the current scenario of Saudi Arabia Vision 2030, which values cultural enrichment as well as sustainable development (OECD, 2022).

The upcoming study will focus on investigating the role of lifelong learning in intellectual security, resilience, and sustainability in the culture of Saudi Arabia. The study will focus on outlining research guidelines on how this issue can be approached. The research outcomes will impact national security, preservation of culture, and the shift in the minds of society. Through maximising the usage of lifelong learning as a strategy in resisting intellectual insecurity and developing the country, it will help bolster its status in the global knowledge economy (Pennycook & Rand, 2021).

### *Statement of the Problem*

Vision 2030 allows the Kingdom of Saudi Arabia to become a leading force in knowledge economies, new technologies, and AI-driven businesses. Progressive learning acts as an important element in the development of intellectual security. This involves protecting knowledge systems, promoting critical thinking, which acts as an important element in staying economically competent (Mohiuddin et al., 2023). The Kingdom of Saudi Arabia seeks to become the world's most adept AI user by the year 2027 following an expenditure of almost $1.9 billion, making it one of the leading countries based on the Tortoise Media Government Strategy Index. Although the Kingdom achieves immense progress in this area, another challenge, which is considered complex, is the incorporation of progressive learning into intellectual security policies, which plays an important role in improving the economic environment in the Kingdom of Saudi Arabia (Shaheen, Albeladi, & Khalifa, 2024).

The quick pace of the education system's digitization has resulted in complications in terms of knowledge preservation. While there have been analyses of the changes occurring in both the education sector and cybersecurity, there seems to be a lack of research on the link between ongoing education and intellectual security. The education sector continues to be exposed to cyber threats. The estimated spending on cybersecurity

will go beyond 1.6 billion USD by the year 2027 (Faisal, 2024). There seems to be a lack of research regarding ongoing education or intellectual property preservation as an aspect of economic progress. This not only impacts national intellectual security but also undermines the Kingdom of Saudi Arabia's efforts to become a leading state in innovation. The 'Human Capability Development Program', which is an aspect of the 'Vision 2030', promotes ongoing education as well as advanced skills. However, it does not cover intellectual security (Abubakar et al., 2024). As the Kingdom is highly industrialised with immense technological progress, it is important that the latest technological tools be adapted. This will help in efficient preservation of intellectual property. It is an established fact that 'today's global marketplace is an intellectual property marketplace', given its immense technological progress (Ecker et al., 2022).

***Research Questions***

1. What are the key challenges and hurdles which affect the effectiveness of continuous education as a tool for promoting intellectual security?
2. What needs to be considered in order to ensure a system of continuous education can be established that will provide intellectual protection in line with Vision 2030?
3. What particular security measures or interventions are needed in order to protect intellectual assets, and how can this be implemented?
4. What kind of indicators and measures of evaluation can ensure the success and effectiveness of the program of continuous education in reaching intellectual security in the Kingdom of Saudi Arabia?
5. What are the key parts of a comprehensive model that can activate the role of continuous education in intellectual security, and how can they relate to each other?

***Research Objectives***

1. Evaluate the current state of affairs as well as the effectiveness of the program of continuous education in promoting intellectual security within the Kingdom of Saudi Arabia.
2. Identify and rank the major challenges or barriers affecting the role of continuous education in attaining intellectual security.
3. Outline the criteria or process involved in ensuring the development of a framework of continued education that will effectively ensure intellectual protection within the framework of Vision 2030.
4. Develop an overall framework or proposal based on evidence related to implementing the concept of continuous education in attaining intellectual security.

***Study Scopes***

**Objective Scope**

The aim of this study is to explore the relationship between continuing education and intellectual security within the educational context. It will examine the interrelated constructs, their mutual influences, and the degree to which continuous education supports the preservation of intellectual stability.

**Time Scope**

The proposed research will be pursued within a time frame that fits the policies in place concerning education. The time frame will ensure that there is an investigation into the developments that have been taking place within the current years concerning the position of Continuing Education within intellectual security.

**Spatial Scope**

The study will concentrate on schools and institutions of learning within a particular national or regional context. Geographically locating the research will aid in making a broad-based assessment of various factors relating to intellectual security.

**Human Scope**

The human subjects participating in this research will consist of individuals involved in continual education programs as learners, teachers, or administrators. The human subjects chosen will include individuals considered stakeholders in activities geared at improving intellectual security through educational endeavors.

### *Key Concepts and Terminologies*

#### Lifelong Learning

The gains derived from this new knowledge and skills learned throughout an individual's life contribute greatly to the development of an individual. This entails both formal and non-formal experiences of learning that help an individual adapt effectively to the dynamics of labor markets. This continues with the aid of learning from the society that respects knowledge (Yilmaz & Karaoglan Yilmaz, 2023).

#### Security of the Mind

The protection of the mind from the influence of misleading information is critical in intellectual integrity. Media literacy skills among other aspects of cognition in cyber space play a significant role in improving intellectual autonomy (Melisa et al., 2025).

#### Society of Knowledge

A knowledge society is characterized by the application of knowledge in an attempt to stretch the boundaries of progress. Open innovation, learning, and equity in information can be some of the key aspects that can help contribute positively to a knowledge society. Institutions' role matters in helping this concept become a part of progress (Blizzard, 2023).

#### School Digital Change

Digital transformation in the educational sector involves the application of technology in both the educational and administrative aspects of an institution, thus bringing a transformation in school culture. The application of artificial intelligence, machine learning, or both enhances the education sector by offering personalized learning (Essien et al., 2024).

#### Human Capital Development

Improvement of human capital requires efforts focused on improving the human resource base of an economy through education. The government of Saudi Arabia understands the importance of training its labor force and diversifying its economy, which represents national development priorities (Alanazi & Alhazmi, 2023).

#### Future Economies

The future economies will depend more on innovation, technology, and knowledge. For this reason, it's important that individuals invest in learning. The key factors of the economies will include entrepreneurship, sustainability, and adaptability owing to technological and global changes (Alkhaldi, AlZain, & Masud, 2022).

## Literature Review

The current section discusses the process of critical literature review, which entails the scrutiny, classification, and assessment of existing literature. The section identifies the existing research gaps, including methodological trends, assumptions, agreements, and disputes, which will help create a solid foundation on which the current research will be based.

### *Comprehensive Overview*

The empirical researches that started from the year 2020 until 2025 tend to investigate the concept of intellectual security in the education system of Saudi Arabia, as well as discover the opportunities available for individuals with intellectual disabilities. The researches cover various aspects from early childhood education up to higher education. The theoretical perspectives of this research cover issues concerning inclusive education, models of transition services, and intellectual security. The intellectual security concept falls in line with the guidelines of the Vision 2030 of the Kingdom of Saudi Arabia. The number of samples of the researches conducted varied from 113 up to 400. The samples include individuals with intellectual disabilities, teachers, faculty members, curriculum designers, and high school students.

### *Thematic Analysis*

There appear to be three important themes emerging in current literature pertinent to education in the country of Saudi Arabia. The first important theme is on the matter of supporting transition in intellectual Disability, which encompasses issues of planning, multiagency working, and individual support. The first important theme thus identifies current concerns and issues pertinent to the application of policies. The second important theme is on intellectual security, which encompasses issues of ideologic, cultural, and cyber education. The literature pertinent to this theme identifies concerns among authors that modernization can be attained by application of education policies and practices, which emphasize one's identity dimension while negating the impacts of an ideologic ideology. The third important theme encompasses issues of adapting curriculums based on international patterns of education.

### *Comparative Analysis*

Findings from research literature indicate structural concerns such as the unprepared nature of teachers, coordination issues among agencies, or the misalignment of policy design and implementation. The pivotal role of teachers' quality or training features prominently in all research on intellectual security. For an effective approach, culturally responsive strategies must harmonize modernization efforts with preserving culture. There is also variation on an individual or method level. While some researchers follow structural approaches in reviewing policies, others realize research goals by focusing on groups– quantitatively or qualitatively. The concept of intellectual security has been different among various research studies. While some researches on the subject describe intellectual security as psychological phenomena quantifiable by quantitative research methodology, others describe it as sociocultural phenomena.

### *Advanced Integration*

Recent studies show that there is a shifting landscape of education in the Kingdom of Saudi Arabia, which seeks modernization with the protection of intellectual safety. The effectiveness of this transition can be achieved by implementing an effective policy framework. The findings of the use of meta-analyses show the intersection of intellectual safety, inclusion of disabled individuals, preservation of culture, and cyber protection. The current research will continue this discussion by exploring literature on training teachers, implementing an education policy, or adapting culturally. Theoretical perspectives will contribute significant insights into this research.

### *Research Gap and Current Study Objectives*

It still seems that there is a lack of research on the intersection of inclusive education, intellectual security, and transformation in education within the socioeconomic environment of Saudi Arabia. Each of these concepts has been explored on its own by existing research, without regard to intervention outcomes or overall strategic methodology. The research methodologies that seem suboptimal are those that do not interact with all stakeholders, do not stress computer literacy/socioeconomic incorporation, or do not investigate resources effectively available for application of inclusion. The current research proposal seeks to develop an overall strategic methodology by merging both concepts of inclusive education as well as intellectual security. The research involves multiple levels of research analyses, optimization of resources, and flexibility of multiple concepts in a culturally vibrant environment.

### *Summary*

Studies concerning the issue of educational transformation challenges in Saudi Arabia, intellectual security issues, and adapting to culture show both developments and setbacks. An assessment of the methodologies, models, or concepts has uncovered setbacks concerning comprehensive implementation of policies. The proposed research will fill this gap by developing holistic strategies of intervention across the boundaries of concepts or models. An immense addition will be brought to education research by this research.

## Methodology

### *Study Approach*

The research methodology included a combination of both quantitative and qualitative research methods. The combination of the two research methodologies assisted in data triangulation. The data triangulation was achieved through the use of both numerical data and information from the research participants.

### *Research Design and Procedures*

A descriptive survey design was considered the best approach to investigate the views of all stakeholders participating or involved in continuing education. The research data was collected through the use of both structured questionnaires and semi structured interviews. The allocation scheme applied in stratified sampling was used. For the stratified sampling, the members of the identified population first participated in the online data collection scheme. The data collected was all anonymous. Data was pre-analyzed before the application of both statistical and thematic analyses.

### *Sample and Population*

The research sample included individuals attending continuing education programs across Prince Sattam bin Abdulaziz University. A stratified random sample of some 250-300 was chosen. The framework of sampling was designed on the key pillars of lifelong learning and intellectual security. This helped ensure that the key strata of stakeholders attending the program or course could be represented.

### *Data Collection*

The data was collected using online questionnaires, as well as interviews. Both methods of data collection were evaluated for clarity, reliability, and validity. Even though the data collected through the interviews was valid, as it provided information pertinent to the research question on intellectual security experiences of the data subjects, it was not quantifiable. The opposite applies, as it was quantifiable, making it ideal for data analysis. The data collection tools suited the Saudi educational environment.

### *Statistical Tools*

The quantitative data was analysed for patterns using the SPSS program (SPSS Version 28), including t-tests, ANOVA, and regression analyses. The qualitative data was collected from the interview replies in form of texts. The data was analysed using the NVivo software. There was an element of objectivity in this research as it was analysed using both qualitative and quantitative data.

## Results

The research findings section provides information on data extracted from questionnaires, interviews, and documentation analyses regarding the strategies of attracting international students employed by Saudi universities. The findings will help identify patterns of trends, issues, or both, from both quantitative and qualitative information. The discussion of findings will follow.

### *Section One: Demographic Information*

**Gender**

The distribution of the respondents by gender is illustrated in Table 1 below. The data shows that there was a dominance of male respondents in the research. The male and female respondents comprised 62.98% and 37.1% of the population, respectively.

**Table 1:** *Distribution of Respondents by Gender.*

| Gender | Frequency | % |
|---|---|---|
| Male | 112 | 62.9 |
| Female | 66 | 37.1 |
| Total | 178 | 100.0 |

**Source:** The formulated data were compiled and analysed based on responses obtained from the field survey questionnaire administered to the study sample.

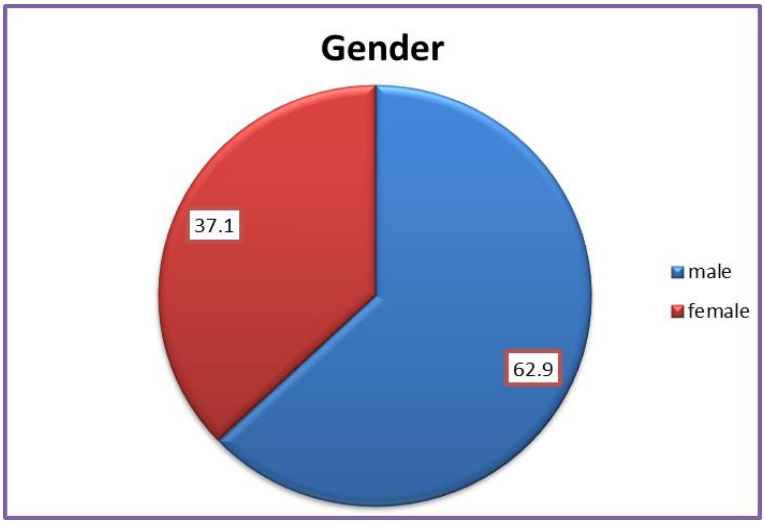


**Figure 1:** *Distribution of Respondents by Gender.*

**Age Group**

Table 2 and Figure 2 indicate the age distribution of the respondents. The findings show that 51.7% of participants were between 25 and 44 years old, 31.5% were aged 45 years or older, and 16.9% were younger than 25 years. This suggests that the majority of respondents belong to the middle-aged group, representing individuals with considerable educational and professional experience.

**Table 2:** *Distribution of Respondents by Age.*

| Age Group | Frequency | Percentage (%) |
|---|---|---|
| Under 25 Years | 30 | 16.9 |
| 25 to Less than 45 Years | 92 | 51.7 |
| 45 Years and Above | 56 | 31.5 |
| **Total** | 178 | 100.0 |

**Source:** The data were collected and analysed using the survey questionnaire administered to the sample of the field study.

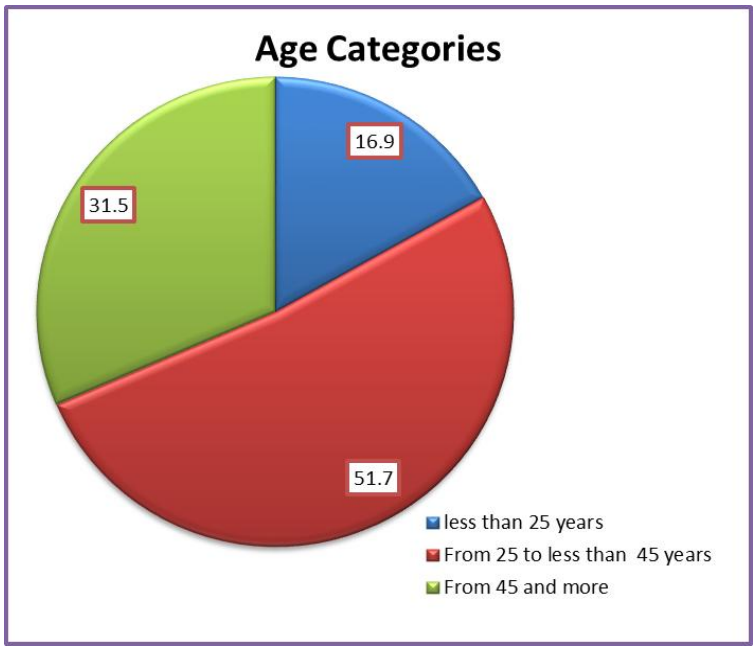


**Figure 2:** *Distribution of Respondents by Age.*

### Highest Educational Qualification Obtained

Table 3 and Figure 3 present the respondents' educational qualifications. The results show that 43.3% of participants held doctoral degrees, 21.3% possessed bachelor's degrees, 9.6% had diplomas, and 4.5% held master's degrees. This distribution indicates that the sample was predominantly composed of individuals with advanced academic qualifications.

**Table 3:** *Distribution of Respondents by Educational Level.*

| Educational Level | Frequency | Percentage (%) |
|---|---|---|
| Secondary or Below | 38 | 21.3 |
| Diploma | 17 | 9.6 |
| Bachelor's Degree | 38 | 21.3 |
| Master's Degree | 8 | 4.5 |
| Doctorate | 77 | 43.3 |
| **Total** | 178 | 100.0 |

**Source:** The rationale was developed and analysed based on the survey questionnaire administered to the field study sample.

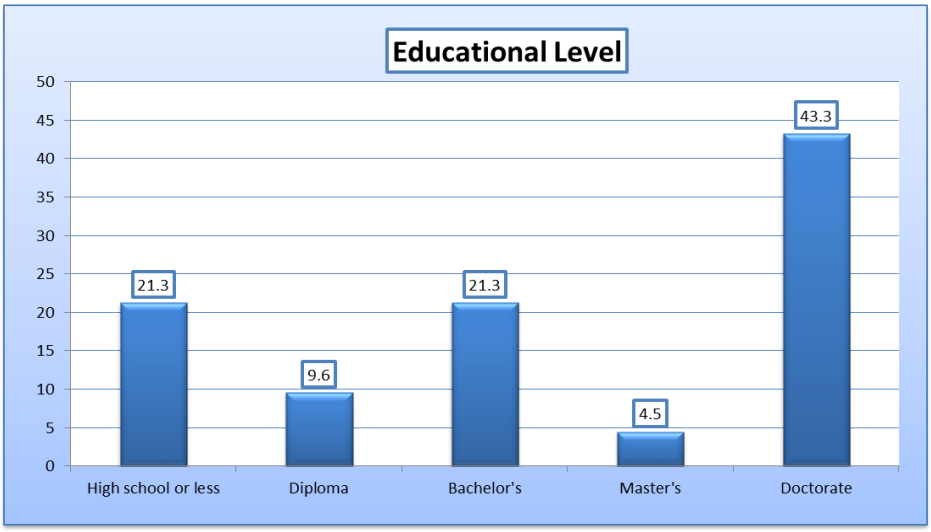


**Figure 3:** *Distribution of Respondents by Educational Level.*

### Current Occupation

The distribution of the respondents on the basis of their current occupations is presented in Table 4 & Figure 4. The data reveals that the percentage of professors or researchers was 40.4%, followed by individuals working in government jobs with a percentage of 31.5%. The percentage of students was found to be 19.1%, followed by individuals working in other sectors with a percentage of 5.6%. The percentage of individuals working in the private sector was found to be 3.4%.

**Table 4:** *Distribution of Respondents by Current Occupation.*

| Current Occupation | Frequency | Percentage (%) |
|---|---|---|
| Student | 34 | 19.1 |
| Faculty Member or Researcher | 72 | 40.4 |
| Government Employee | 56 | 31.5 |
| Private Sector Employee | 6 | 3.4 |
| Other | 10 | 5.6 |
| **Total** | 178 | 100.0 |

**Source:** The data were collected and analysed based on the questionnaires administered to the field study sample.

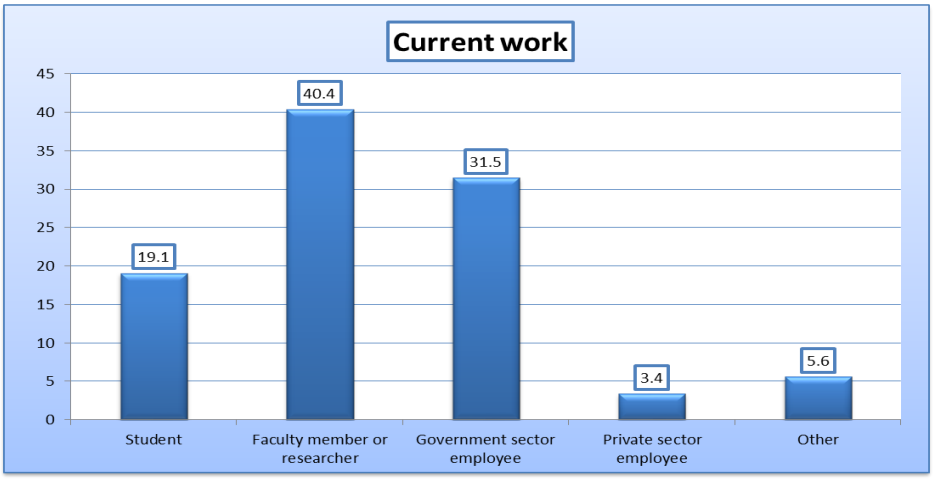


**Figure 4:** *Distribution of Respondents by Current Occupation.*

**Participation in Professional Development Programs**

The table below shows the distribution of the participants based on their attendance of intellectual security professional development activities in the last two years as depicted by Table 5 and Figure 5 below. The findings show that 63.5per of the respondents had never attended intellectual security professional developments, while 20.2per had attended once, followed by 10.7per who attended two to three times, followed by 3.4per who attended four to six times, while only 2.2per attended more than six times. The distribution shows low engagement of the participants in intellectual security professional developments.

**Table 5:** *Distribution of Respondents by Participation in Professional Development Programs in the Field of Intellectual Security During the Last Two Years.*

| Participation | Frequency | Percentage (%) |
|---|---|---|
| Never Participated | 113 | 63.5 |
| Participated Once | 36 | 20.2 |
| Participated 2-3 Times | 19 | 10.7 |
| Participated 4-6 Times | 6 | 3.4 |
| Participated More than 6 Times | 4 | 2.2 |
| **Total** | 178 | 100.0 |

**Source:** The data were gathered and analysed from the survey questionnaires administered to the field study sample.

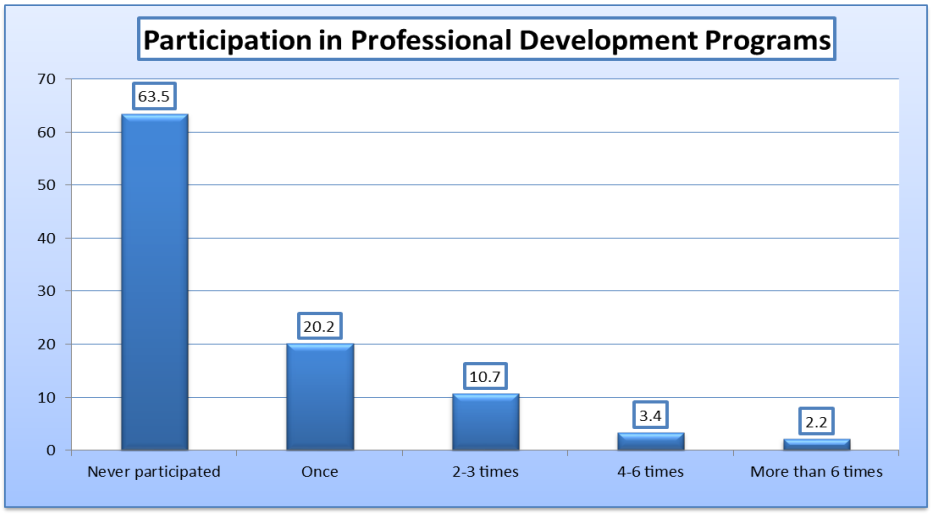


**Figure 5:** *Distribution of Respondents by Participation in Professional Development Programs in the Field of Intellectual Security During the Last Two Years.*

### Level of Interest in Intellectual and Cultural Issues

The distribution of the participants based on their level of interest in intellectual issues in Saudi Arabian society is presented in Table 6. Figure 6 below outlines the data. The results show that 37.1% of the participants showed low levels of interest, followed by a reasonable level of interest by 22.5%, interest by 21.3% of the participants, very interest by 12.4% of the participants, and not interested by 6.7%.

**Table 6:** *Distribution of Respondents by Level of Interest in Following Intellectual and Cultural Issues in Saudi Society.*

| Level of Interest | Frequency | Percentage (%) |
|---|---|---|
| Not Interested at all | 12 | 6.7 |
| Interested to a Small Degree | 40 | 22.5 |
| Moderately Interested | 66 | 37.1 |
| Highly Interested | 38 | 21.3 |
| Very Highly Interested (Yes) | 22 | 12.4 |
| **Total** | 178 | 100.0 |

**Source:** Data were collected and analysed from the survey questionnaire administered to the field study sample.

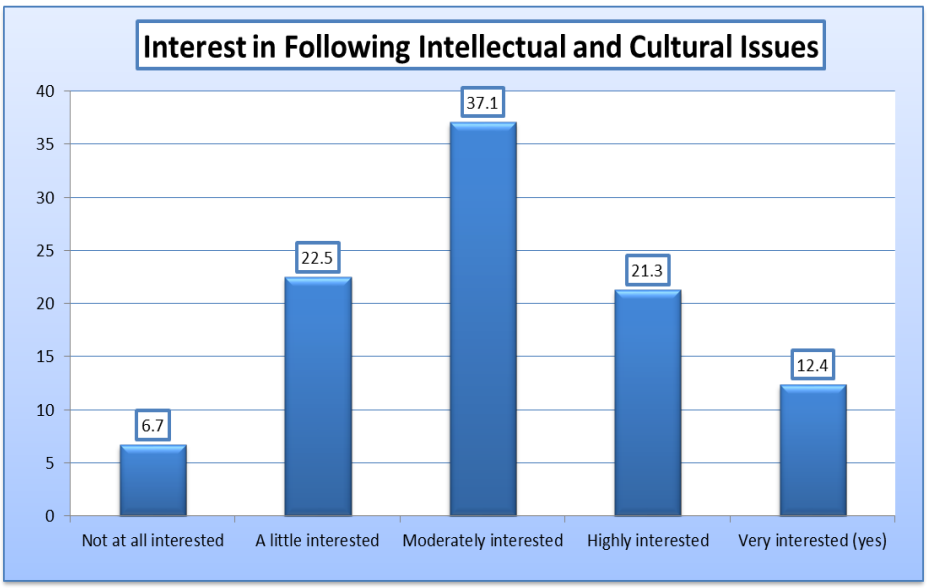


**Figure 6:** *Distribution of Respondents by Level of Interest in Following Intellectual and Cultural Issues in Saudi Society.*

### Level of Proficiency in Digital Technologies

Table 7 and Figure 7 present the distribution of respondents based on their proficiency in using digital technologies and electronic platforms. The results indicate that 37.1% reported a moderate level of competence, 22.5% a low level, 21.3% a high level, 12.4% an extremely high level, and 6.7% stated they had no proficiency at all.

**Table 7:** *Distribution of Respondents by Level of Proficiency in Using Digital Technologies and Electronic Platforms.*

| Skill Level | Frequency | Percentage (%) |
|---|---|---|
| Very Beginner | 13 | 7.3 |
| Beginner | 66 | 37.1 |
| Intermediate (Yes) | 82 | 46.1 |
| Advanced | 17 | 9.6 |
| Expert | 13 | 7.3 |
| **Total** | 178 | 100.0 |

**Source:** Data were collected and analysed from the survey questionnaire for the field study sample.

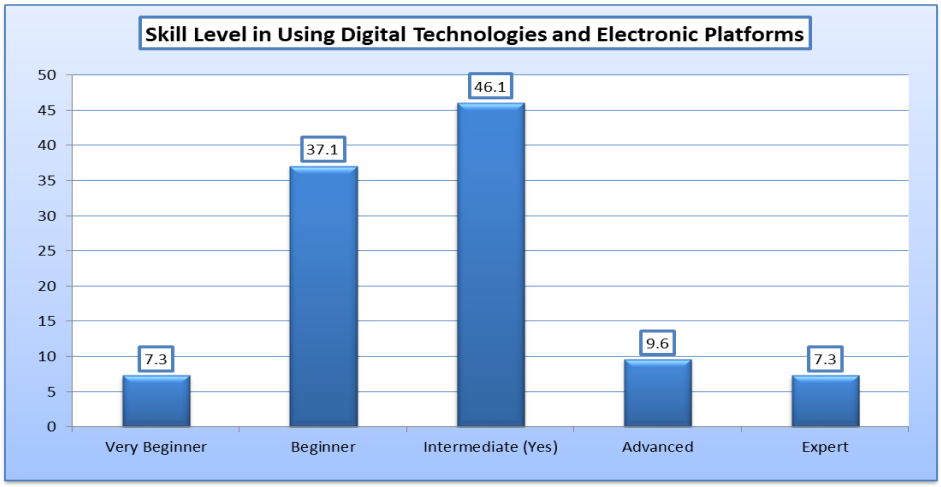


**Figure 7:** *Distribution of Respondents by Level of Proficiency in Using Digital Technologies and Electronic Platforms.*

### *Section Two: Current Analysis of the Role of Continuing Education in Strengthening Intellectual Security in the Kingdom of Saudi Arabia*

#### Educational Engagement

Table 8 shows that intellectual security is still enthusiastically emphasized in Saudi Arabia. The data, arranged by mean value and relative importance, is presented in descending order as follows: 4.21 and 84.20. The mean value of 4.21 shows that the members consider Continuing education as an important concept of their lives. The subjective scale values, relative to the hypothetical mean value, show positive attitudes on acceptance of practices of Continuing education. Continuing education as an important practice of intellectual security scored a mean of 3.98 and relative importance of 79.60. This shows that more than the hypothetical mean, it was achieved. Continuing education measured by normal practices scored a mean of 3.91 with relative importance of 78.20. The t-test was significant on all scales, attesting that all three practices of intellectual security scored differently on mean from the hypothetical mean of 3. The findings show that intellectual security of the members increased by an average mean value of 4.03 and relative importance of 80.67. The finding indicates that members feel more confident of their intellectual capabilities despite of average mean value of education they acquired.

#### Cognitive Value

As illustrated in Table 8, the data shows that the benefits of continuing education to intellectual security and its value in the Kingdom of Saudi Arabia show significant outcomes. The indicator of a high level of adoption had the highest mean of 4.17 and relative importance of 83.40. The enhancement of intellectual tools scored the second-highest mean of 4.14 with relative importance of 82.80. Third was the development of intellectual security vision, which scored a mean of 3.96 with relative importance of 79.20. The t-test indicated that all the mean scores exceeded the theoretical mean of 3, which shows that there was a significant outcome. The mean score of the overall perceived effectiveness of continuing education in their engagement in education was measured by a mean of 4.09 with relative importance of 81.80. The findings illustrated that effective continuing education provides significant benefits in improving the intellectual security of the Kingdom of Saudi Arabia.

#### Employment and Practical Application

The data collected from Table 8 & Figure 8 reveals the impact of continuing education on workplace comfort of the Saudi participants. The application of the concept of continuing education into practice was the most prominent factor, recording a mean of 4.10 with a relative importance of 82.0%. The potential of analyses of events occurring on a day-to-day aspect comes second, recording a mean of 4.09 with a relative importance of 81.80%. The improvement of specific skills followed suit, recording a mean of 4.04 with a relative importance of 80.80%. The difference of all means was found significant by the t-test, which implies that all values surpassed the theoretical mean of 3. The overall field average, which attained significant importance, was recorded as 4.08 with a relative importance of 81.53%. The data implies that the application of lifelong education provides intellectual security in the workplace or practices of Saudi Arabia.

### Intellectual Transformation

As pointed out in Table 8, continued education is an important factor that contributes to the emotional stability of Saudis despite all the changes. The most marked improvement was found in intellectual awareness, misunderstandings from a cognition perspective, and thinking patterns with mean values of 4.17 (84.30%), 4.14 (82.80%), and 3.99 (79.80%), respectively. The t-test values indicated that all three mean values exceeded the theoretical mean of 3. The overall mean value of this dimension was 4.10, with relative importance of 82.0%. Moreover, an average of 4.08 with relative importance of 81.6% indicated that continued education enables emotional stability and adaptability of Saudis.

**Table 8:** *Current Reality of the Role of Continuing Education in Enhancing Intellectual Security in the Kingdom of Saudi Arabia.*

| No. | Statement | Mean Score | Relative Importance (%) | Rank | Level | t-Value | Statistical Significance |
|---|---|---|---|---|---|---|---|
| 1 | Educational Engagement | 4.03 | 80.67 | 4 | High | 19.11 | 0.000 |
| 2 | I regularly participate in continuing education activities | 3.98 | 79.60 | 2 | High | 17.034 | 0.000 |
| 3 | I allocate regular time for continuing education | 3.91 | 78.20 | 3 | High | 15.093 | 0.000 |
| 4 | I view continuing education as an essential part of my personal growth | 4.21 | 84.20 | 1 | Very High | 22.437 | 0.000 |
| 5 | Cognitive Value | 4.09 | 81.80 | 2 | High | 18.51 | 0.000 |
| 6 | I develop intellectual awareness through continuing education programs | 4.17 | 83.40 | 1 | High | 23.646 | 0.000 |
| 7 | Programs help me develop cognitive tools that assist analysis and interpretation | 4.14 | 82.80 | 2 | High | 22.425 | 0.000 |
| 8 | These programs contributed to developing my vision toward intellectual security issues | 3.96 | 79.20 | 3 | High | 16.493 | 0.000 |
| 9 | Employment and Practical Application | 4.08 | 81.53 | 3 | High | 17.051 | 0.000 |
| 10 | I apply what I learn from continuing education programs in real-life situations | 4.10 | 82.00 | 1 | High | 20.357 | 0.000 |
| 11 | I observe improvement in my practical skills due to participation in intellectual programs | 4.04 | 80.80 | 3 | High | 16.790 | 0.000 |
| 12 | I benefit from acquired knowledge in analysing daily phenomena | 4.09 | 81.80 | 2 | High | 19.291 | 0.000 |
| 13 | Intellectual Transformation | 4.10 | 82.00 | 1 | High | 20.88 | 0.000 |
| 14 | I constantly change my thinking pattern due to continuing education programs | 3.99 | 79.80 | 3 | High | 16.459 | 0.000 |
| 15 | I have become more open and accepting of different viewpoints | 4.17 | 83.40 | 1 | High | 21.571 | 0.000 |
| 16 | Programs developed my awareness of the dangers and impact of misinformation | 4.14 | 82.80 | 2 | High | 20.094 | 0.000 |
| | Overall Mean | 4.08 | 81.60 | | High | 23.55 | 0.000 |

**Source**: Data collected and calculated from the survey questionnaire administered to the field study sample.

The mean value of the fourth dimension of continuing education, which is intellectual transformation, is 4.10 with the relative importance of 82.0%. From this finding, it can be identified that the role of continuing education is of immense significance in protecting intellectual capital in the environment of Saudi Arabia. The second dimension, which is the cognitive value, achieves a mean of 4.09 with a relative importance of 81.80%, followed by employment and application with a mean of 4.08 and relative importance of 81.53%. The final dimension, which is educational involvement, scores a mean of 4.03 with a relative importance of 80.67%. From all the findings, it can be identified that the role of continuing education is of immense significance in acquiring intellectual development, application, and improvement in cognition in the Saudi environment.

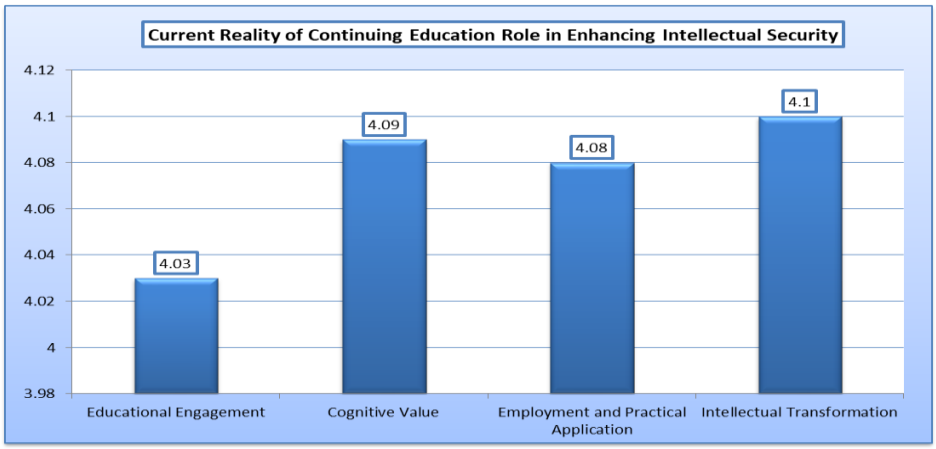


**Figure 8:** *Current Reality of the Role of Continuing Education in Enhancing Intellectual Security in the Kingdom of Saudi Arabia.*

***Section Three: Obstacles and Challenges Limiting the Effectiveness of Continuing Education in Achieving Intellectual Security***

**Critical Thinking**

As indicated in Table 9, the impact of continuing education on intellectual security in Saudi Arabia is significant, especially in the development of critical thinking skills. The most important practice of intellectual security in this regard was the assessment of information reliability prior to making judgments. The result registered a mean of 4.33 with a relative importance of 86.60%. The application of critical thinking skills utilizing objective judgments of new information, as well as the separation of information from bias, registered mean values of 4.16 and 83.20% in relative importance, respectively. However, the t-test resulted showed that all practices exceeded the mean of 3. The mean of all practices was measured at 4.22 with an importance level of 84.33%.

**Immunization Against Intellectual Deviations**

As indicated in Table 9, ongoing education is an important aspect of fostering intellectual security in the Kingdom of Saudi Arabia. The most important determinant was handling violent or exclusionary ideologies (mean = 4.42, relative importance index of 88.4%), followed by the role of intellectual moderation in fostering cohesion (mean = 4.34, relative importance of 86.8%), while the third most important was belief in fostering critical thinking skills in combating deviant ideas (mean = 4.17, relative importance of 83.4%). The t-test indicated that all mean values scored higher than the theoretical mean. The overall mean was measured at 4.31, relative importance of 86.20%, establishing the effectiveness of ongoing education. The findings indicate that ongoing education enhances intellectual moderation, awareness, and safeguards of deviant ideas in society.

**Cultural Identity and Belonging**

From Table 9 and Figure 9, it can be analyzed that the role of lifelong education is significant in improving intellectual security in Saudi Arabia, specifically in terms of strengthening their cultural identity. Cultural identity was found to be the most significant element (mean = 4.49, 89.8%), followed by appreciation of diversity and its manifestation in everyday experiences of belonging (mean = 4.43, more than 88%). The t-test showed that all differences of the actual and hypothetical mean values were significant. The overall mean of

4.45 and significance level of 89.0% validate the finding that the role of lifelong education is of immense significance in strengthening cultural identity in society.

**Information Literacy and Digital Content**

Continuing education efforts also proved useful in improving the ability of participants to access, assess, and effectively utilize information from digital sources. The verification of official sources of information on the internet was scored the highest, with a mean of 4.50 and relative importance of 90.0%. Dealing with misinformation and carrying out critical analyses of information on the internet was scored equally. The t-test showed that there was significant difference in the means from the theoretical mean. The average mean of 4.08 with relative importance of 81.6% shows that CE efforts are doing well despite the challenges, though there is a need for improvement in intellectual security training.

**Table 9:** *Obstacles and Challenges Limiting the Effectiveness of Continuing Education in Achieving Intellectual Security, Classified by Priority.*

| No. | Statement | Mean Score | Relative Importance (%) | Rank | Level | t-Value | Statistical Significance |
|---|---|---|---|---|---|---|---|
| 1 | Critical Thinking | 4.22 | 84.33 | 2 | Very High | 24.514 | 0.000 |
| 1.1 | Verify reliability of information before taking a stance | 4.33 | 86.60 | 1 | Very High | 27.814 | 0.000 |
| 1.2 | Employ analytical thinking skills to interpret new information | 4.16 | 83.20 | 2 | High | 22.405 | 0.000 |
| 1.3 | Distinguish between objective data and personal biases | 4.16 | 83.20 | 2 | High | 25.273 | 0.000 |
| 2 | Immunization Against Intellectual Deviations | 4.31 | 86.20 | 1 | Very High | 20.021 | 0.000 |
| 2.1 | Oppose violence or exclusion advocative theses | 4.42 | 88.40 | 1 | Very High | 21.776 | 0.000 |
| 2.2 | Affirm importance of intellectual moderation | 4.34 | 86.80 | 2 | Very High | 25.571 | 0.000 |
| 2.3 | Possess critical thinking skills to discuss deviant ideas | 4.17 | 83.40 | 3 | High | 25.178 | 0.000 |
| 3 | Cultural Identity and Belonging | 4.45 | 89.00 | 1 | Very High | 24.671 | 0.000 |
| 3.1 | Preserve national identity as part of intellectual security | 4.49 | 89.80 | 1 | Very High | 22.521 | 0.000 |
| 3.2 | Maintain identity elements amid cultural diversity | 4.43 | 88.60 | 2 | Very High | 25.422 | 0.000 |
| 3.3 | Express national belonging through daily practices | 4.43 | 88.60 | 2 | Very High | 24.182 | 0.000 |
| 4 | Information Literacy and Digital Content | 4.40 | 87.93 | 3 | Very High | 23.377 | 0.000 |
| 4.1 | Verify information from official sources before sharing | 4.50 | 90.00 | 1 | Very High | 19.870 | 0.000 |
| 4.2 | Counter misinformation on digital platforms | 4.41 | 88.20 | 2 | Very High | 25.309 | 0.000 |
| 4.3 | Analyse digital content with objective critical standards | 4.28 | 85.60 | 3 | Very High | 25.052 | 0.000 |

**Source**: Data collected and calculated from the survey questionnaire administered to the field study sample.

The results show that the third axis, Cultural Identity and Belonging, is the most essential aspect of intellectual security in the Kingdom of Saudi Arabia, recording a mean of 4.45 and a relative importance of 89.0%. The second most important aspect is Information Literacy and Digital Content, which recorded a mean of 4.40 and a relative importance of 87.93%. The third most important factor is Immunization Against Intellectual Deviations, which recorded a mean of 4.31 and a relative importance of 86.20%. The fourth most important aspect is Critical Thinking, which recorded a mean of 4.22 and a relative importance of 84.23%. Taken as a whole, this shows that the provision of higher education is highly beneficial across various intellectual security aspects, with an emphasis on identity and information.

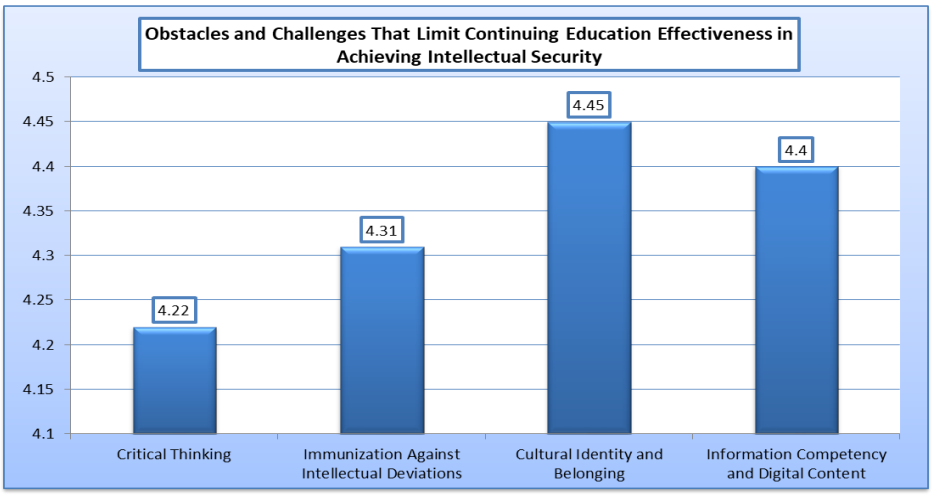


**Figure 9:** *Obstacles and Challenges Limiting the Effectiveness of Continuing Education in Achieving Intellectual Security, Classified by Priority.*

***Section Four: Obstacles to Continuing Education in the Field of Achieving Intellectual Security***

**Institutional Obstacles**

Table 10 below identifies institutional issues which act as barriers in making continuing education an effective tool for improving intellectual security in the region of Saudi Arabia. From the findings, it can be seen that there is no problem concerning financial or technological resources (mean = 3.72, relative importance percentage of 74.4%), the ongoing lack of modern training of teachers (mean = 3.96, relative importance percentage of 73.8%), or a lack of coordination among intellectual governing agencies (mean = 3.70, relative importance percentage of 74.0%), as all mean values exceeded the hypothetical mean of 3. The average mean (mean = 3.70, relative importance percentage of 74.07%) was significant from the t-test.

**Cognitive and Methodological Obstacles**

Continuing education's role in intellectual security is given more emphasis by its barriers in Table 10. The first barrier of this issue is the inability of continuous education to produce intellectual materials on a special level owing to lack of financial and technological resources (mean = 3.72, 74.4%). The lack of effective affiliation with intellectual advisory bodies (mean = 3.70, 74.0%) and lack of adequate modern training of teachers (mean = 3.96, 73.83%) are other barriers. The mean of all variables was more than the theoretical mean of 3, and its overall mean of 3.70 with relative importance of 74.07% was significant in the t-test.

**Obstacles Related to Beneficiaries**

From Table 10, it can be seen that there are various challenges imposed by the beneficiaries that could impact the efficacy of continuing education given to intellectual security in Saudi Arabia. The problem of low engagement in intellectual programmes comes first (mean = 3.80, 76.0%), followed by the problem of opposition to intellectual transformation (mean = 3.71, 74.20%), then by inadequate analytical skills of the beneficiaries (mean = 3.69, 73.20%). The fact that all the mean scores exceeded the hypothetical mean of 3 implies that this problem is prevalent. The mean of 3.73 with an relative importance of 74.67% implies that this problem is significant enough to create an impediment in the efficacy of continued education's contribution to intellectual security.

**Social and Cultural Obstacles**

The data in Table 10 and Figure 10 show the list of challenges imposed by society and culture on the effectiveness of continuing education in advocating intellectual security in the Kingdom of Saudi Arabia. The most significant ones include the negative impacts of social networking sites that emphasize distribution rather than reflection (mean = 3.90, 78.0%), the lack of intellectual discourse (mean = 3.76, 75.2%), as well as lack of involvement by members of society in intellectual activities. The t-test showed that there was a significant difference in all of the mean values, which exceeded the average in the theoretical framework. The overall mean of 3.80 showed significant levels.

**Table 10:** *Obstacles to Continuing Education in the Field of Achieving Intellectual Security.*

| No. | Statement | Mean Score | Relative Importance (%) | Rank | Level | t-Value | Statistical Significance |
|---|---|---|---|---|---|---|---|
| **First: Institutional Obstacles** | 3.70 | 74.07 | Fourth | High | 11.051 | 0.000 | |
| 1 | Weak integration between continuing education institutions and intellectual guidance authorities | 3.70 | 74.00 | 2nd | High | 10.799 | 0.000 |
| 2 | Limited financial and technical resources allocated for developing specialized intellectual content | 3.72 | 74.40 | 1st | High | 11.050 | 0.000 |
| 3 | Insufficient training of program providers to address contemporary intellectual issues | 3.69 | 73.80 | 3rd | High | 9.976 | 0.000 |
| **Second: Cognitive and Methodological Obstacles** | 3.75 | 75.00 | Second | High | 8.662 | 0.000 | |
| 4 | Dominance of theoretical content in programs without practical applications related to societal needs | 3.83 | 76.60 | 1st | High | 12.800 | 0.000 |
| 5 | Weak linkage of continuing education content to current intellectual security issues | 3.66 | 73.20 | 2nd | High | 9.653 | 0.000 |
| **Third: Beneficiary-Related Obstacles** | 3.73 | 74.67 | Third | High | 13.058 | 0.000 | |
| 6 | Resistance to positive intellectual change among some beneficiaries | 3.71 | 74.20 | 2nd | High | 11.527 | 0.000 |
| 7 | Deficiency in analytical and critical skills among participants | 3.69 | 73.80 | 3rd | High | 10.151 | 0.000 |
| 8 | Low participation rates in intellectually focused programs | 3.80 | 76.00 | 1st | High | 12.698 | 0.000 |
| **Fourth: Social and Cultural Obstacles** | 3.80 | 76.00 | First | High | 12.554 | 0.000 | |
| 9 | Absence of a supportive environment for open intellectual dialogue in some communities | 3.76 | 75.20 | 2nd | High | 11.541 | 0.000 |
| 10 | Weak community engagement with enlightened intellectual initiatives | 3.74 | 74.80 | 3rd | High | 11.629 | 0.000 |
| 11 | Negative impact of social networks in disseminating content contrary to moderate thought | 3.90 | 78.00 | 1st | High | 14.819 | 0.000 |
| **Overall Mean** | 3.74 | 74.80 | | High | 12.035 | 0.000 | |

**Source:** Collected and calculated from the survey questionnaire administered to the field study sample.

As illustrated earlier, the fourth axis, which represents barriers related to the social culture of the individuals, is found to be the most influential factor in this regard within the Saudi Arabian setting. The mean score acquired by this axis was 3.80, with an importance of 76.0%. The second most influential factor, which represents the barriers related to the intellectual challenges of cognition, methodology, and strategies, acquired a mean score of 3.75 with an importance of 75.0%. The third most influential axis, which represents the barriers related to the beneficiaries, scored a mean of 3.73 with an importance of 74.67%. The least influential factor, which represents the institutional barriers, acquired a mean of 3.70 with an importance of 74.07%. The institutional barriers of continued education were found to be the least significant.

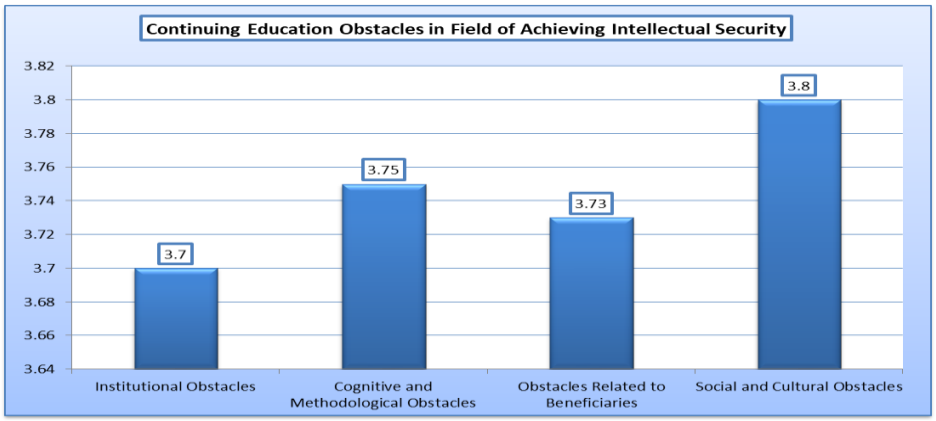


**Figure 10:** *Obstacles to Continuing Education in Achieving Intellectual Security.*

***Section Five: A Proposed Model to Activate the Role of Continuing Education in Achieving Intellectual Security and Its Implementation Mechanisms***

**Organizational and Administrative Requirements**

As depicted in Table 11, the role of continuous education is strategic and intellectual in nature. It acts as a framework, which aims at embedding intellectual security in the organizational and administrative setup of the Kingdom of Saudi Arabia. The most fundamental element of this framework is partnership with institutions of security or culture (mean = 4.26, relative importance of 85.20%), followed by adapting the strategic goals of education by embedding intellectual security, defining performance indicators (mean = 4.22, relative importance of 84%), or both. The significant association of all variables denotes the flexibility of regulatory policies. The outcome of the t-test indicated that all the values of means are significant from the hypothetical mean of 3, signifying the effectiveness of all strategies. The mean was found to be 4.24, relative importance of which was denoted by 84.8%. The findings indicate that institutions of education in the Kingdom of Saudi Arabia display a significant level of concern for protecting intellectual integrity.

**Knowledge and Content Requirements**

Based on Table 11, the program of continued education in Saudi Arabia effectively handles organisational/administrative needs in improving intellectual security. The highest priority focuses on creating special programs that can combat extremism/misinformation (mean = 4.36, relative importance of 87.20%), followed by creating educational materials focusing on critical thinking/key awareness information. Additionally, involving experts from intellectual securities and critical thinking in program development (mean = 4.26, relative importance of 85.20%) or incorporating intellectual security into digital learning platforms (mean = 4.24, relative importance of 84.80%) was highly effective. However, all values surpassed the mean of the hypothesis, ensuring the strategic application of all measures. The t-tests performed on the mean values showed significant variations from the mean values of the hypothesis (mean of tests = 3). The mean of the criteria's average was measured at 4.29, relative importance of 85.70%. The level of institutional commitment was evidently strong on intellectual securities. The data indicated that special program designs, expert engagement, or incorporation of intellectual security into curriculums can make an enormous difference in the environment. As such, organisational measures in a continued education program provide an optimal strategy in promoting intellectual security in the Kingdom of Saudi Arabia.

**Training and Pedagogical Mechanisms**

As seen in Table 11 below, the use of continued education in Saudi Arabia applies sophisticated training methodologies that focus on fostering intellectual security. The average mean of intellectual learning in different settings, as well as tutor engagement in intellectual discussions, scored an average of 4.22, with a relative importance of 84.40%. Other significant approaches entail the use of pre- and post-tests, which scored an average mean of 4.18, with a relative importance of 83.60%. Encouraging self-managed online intellectual learning scored an average mean of 4.17, with a relative importance of 83.40%. The approaches scored higher than the hypothetical mean, which indicated that the institutions are dedicated to maintaining the quality of intellectual education. Moreover, the t-test indicated that the variances amongst the average means of intellectual learning settings and intellectual discussion tutor engagement with the theoretical mean (3) values were highly significant. The average mean of all the approaches was found to be 4.20, with a relative importance of 83.25%. The findings provide evidence that intellectual learning approaches effectively nurture intellectual confidence amongst students by promoting autonomy, teamwork, and computer literacy. Using continued education, highly sophisticated intellectual approaches that boost intellectual resilience and security are effectively applied.

**Technical and Community Mechanisms**

The data in Table 11 reveals that the current education environment in Saudi Arabia exhibits a significant level of progress in technological approaches, in addition to community approaches that focus on improving intellectual security. The most efficient approaches include the use of social networking sites in giving balanced intellectual perspectives (mean=4.31, 86.20%), as well as the participation of civil society organizations in intellectual security awareness (mean=4.26, 85.20%). Other approaches include the design of expert e-platforms (mean=4.24, 84.80%), in addition to the use of artificial intelligence tools in monitoring the counterbalance of extremist perspectives on intellectual security (mean=4.20, 84.00%). The approaches all scored higher than the hypothetical mean, thus of significant strategic relevance. The t-test showed that there was an overall significant difference from the theoretical mean of 3.00 with an overall mean of 4.25, with relative importance of 85.05%. The data shows that institutions take steps that favor technological improvement-oriented approaches in intellectual security, making them more preferable than others. The use of AI tools, technology, and communities ensures that comprehensive approaches are employed to make intellectual security more enhanced through ongoing education.

**Practical Implementation Mechanisms**

As seen in Table 11 below, the implementation of continuing education in the context of Saudi Arabia can be achieved by various highly effective measures, including the explanation of role involvement (mean = 4.25, 85.00%), carrying out pilot studies on a nationwide level prior to the nationwide implementation (mean = 4.22, 84.80%), connecting nationwide implementation with phased funding (mean = 4.19, 83.60%), or establishing an overseeing body (mean = 4.18, 83.60%), among others. The measures all scored high and attained significant outcomes.

**Implementation Stages**

As illustrated in Table 11 & Figure 11, the impact of ongoing education in Saudi Arabia on the stages of intellectual security strategies' implementation was found to be of great importance. The most important strategies found were the review of documents at every level of implementation (mean = 4.38, relative importance of 85.20%), testing models in selected centres (mean of 4.38, relative importance of 84.60%), followed by others like prepping individuals for participation (mean of 4.22, relative importance of 84.40%), biannual review (mean of 4.18, relative importance of 83.60%), and step-by-step expansion of all levels (mean of 4.13, relative importance of 82.60%). The mean of all parameters exceeded the hypothetical mean (3), illustrating overall acceptance and dedication. The t-test indicated that all parameters deviate from the hypothetical mean of (3), which was significant. The average mean of all stages of implementation was found to be (4.20), relative importance of which was (84.08%). The findings indicate that the implementation of intellectual security strategies is methodical and executed perfectly.

**Table 11:** *Proposed Model for Activating the Role of Continuing Education in Achieving Intellectual Security and Its Implementation Mechanisms.*

| Category | Item | Mean | Relative Importance (%) | Rank | Level | t-Value | Statistical Significance |
|---|---|---|---|---|---|---|---|
| **1. Organizational & Administrative Requirements** | Overall | 4.24 | 84.80 | 3 | Very High | 24.521 | 0.000 |
| | Intellectual security as a strategic goal in policies | 4.24 | 84.80 | 2 | Very High | 25.513 | 0.000 |
| | Develop performance indicators for intellectual impact | 4.22 | 84.40 | 3* | Very High | 25.422 | 0.000 |
| | Build partnerships with security & cultural bodies | 4.26 | 85.20 | 1 | Very High | 25.603 | 0.000 |
| | Update regulatory frameworks for flexible intellectual response | 4.22 | 84.40 | 3* | Very High | 24.456 | 0.000 |
| **2. Knowledge & Content Requirements** | Overall | 4.29 | 85.70 | 1 | Very High | 29.082 | 0.000 |
| | Design training content enhancing critical thinking | 4.28 | 85.60 | 2 | Very High | 27.995 | 0.000 |
| | Develop programs addressing extremist thought & misinformation | 4.36 | 87.20 | 1 | Very High | 28.310 | 0.000 |
| | Include intellectual security in digital curricula | 4.24 | 84.80 | 4 | Very High | 23.449 | 0.000 |
| | Engage thought & security experts in educational units | 4.26 | 85.20 | 3 | Very High | 23.573 | 0.000 |
| **3. Training and Pedagogical Mechanisms** | Overall | 4.20 | 83.95 | 5 | High | 24.025 | 0.000 |
| | Scenario-based learning for intellectual challenges | 4.22 | 84.40 | 1 | Very High | 25.422 | 0.000 |
| | Integrate pre- and post-assessments to measure awareness | 4.18 | 83.60 | 2 | High | 23.982 | 0.000 |
| | Train trainers on managing intellectual debate & polarization | 4.22 | 84.40 | 1 | Very High | 24.748 | 0.000 |
| | Activate self-directed and digital learning | 4.17 | 83.40 | 3 | High | 21.542 | 0.000 |
| **4. Technical and Community Mechanisms** | Overall | 4.25 | 85.05 | 2 | Very High | 23.251 | 0.000 |
| | Create dedicated electronic platforms for intellectual security | 4.24 | 84.80 | 3 | Very High | 24.514 | 0.000 |
| | Use social media to spread moderate intellectual messages | 4.31 | 86.20 | 1 | Very High | 27.814 | 0.000 |
| | Link educational programs with AI platforms for detecting extremist content | 4.20 | 84.00 | 4 | High | 22.405 | 0.000 |
| | Engage civil society institutions in intellectual education support | 4.26 | 85.20 | 2 | Very High | 25.273 | 0.000 |
| **5. Practical Implementation Mechanisms** | Overall | 4.22 | 84.30 | 4 | Very High | 20.021 | 0.000 |
| | Designate a central coordinating body for implementation | 4.18 | 83.60 | 4 | High | 21.776 | 0.000 |
| | Define clear roles for education, security, and civil society | 4.25 | 85.00 | 1 | Very High | 25.571 | 0.000 |
| | Pilot the model in trial areas before national rollout | 4.24 | 84.80 | 2 | Very High | 25.178 | 0.000 |
| | Link implementation mechanisms with phased funding plan | 4.19 | 83.80 | 3 | Very High | 24.671 | 0.000 |
| **6. Implementation Stages** | Overall | 4.20 | 84.08 | 5 | High | 22.521 | 0.000 |
| | Initiate participatory planning to build applied model | 4.22 | 84.40 | 3 | High | 25.422 | 0.000 |
| | Pilot the model in specific centres to assess effectiveness | 4.23 | 84.60 | 2 | Very High | 24.182 | 0.000 |
| | Conduct semi-annual evaluations to monitor intellectual impact | 4.18 | 83.60 | 4 | High | 23.377 | 0.000 |
| | Gradual generalization phase for beneficiaries across regions | 4.13 | 82.60 | 5 | High | 19.870 | 0.000 |
| | Accompany each stage with documentary reports on progress and challenges | 4.26 | 85.20 | 1 | Very High | 25.309 | 0.000 |
| **Overall Average** | | 4.22 | 84.40 | | Very High | 25.052 | 0.000 |

**Source:** Data were compiled and analysed from the survey questionnaire for the field study sample.

The discussion clearly shows that knowledge and contents requirement is the most visible element of intellectual security in the ongoing process of continued education in the Kingdom of Saudi Arabia, which scored an average of 4.29 with relative importance of 85.70%. The average of 4.25 was recorded by the Technical and Community Mechanism with relative importance of 85.05%. Organizational Administrative Requirements scored the third position as an influential element with average of 4.24 and relative importance of 84.80%. Followed by the Practical Implementation Mechanism of which scored an average of 4.22 with relative importance of 84.30%. The least influential element was scored by the training-pedagogical mechanism including the stages of implementation which attained an average of 4.20 with relative importance of 84.08%. The result shows that all domains highly practice intellectual security across educational aspects. Moreover, it clearly shows that the most significant advancement was seen across the domains involving knowledge production, contents development, and application of technology. The key driving force of which was the institutional focus. Moreover, it is observable that both organizational and practicum aspects showed highly significant influence. The findings showed the effectiveness of adopting a methodological combination to produce intellectual security across multiple aspects. The findings clearly provided evidence that application of lifelong learning practices as an overall holistic approach is an effective mechanism for developing intellectual security in the Kingdom of Saudi Arabia.

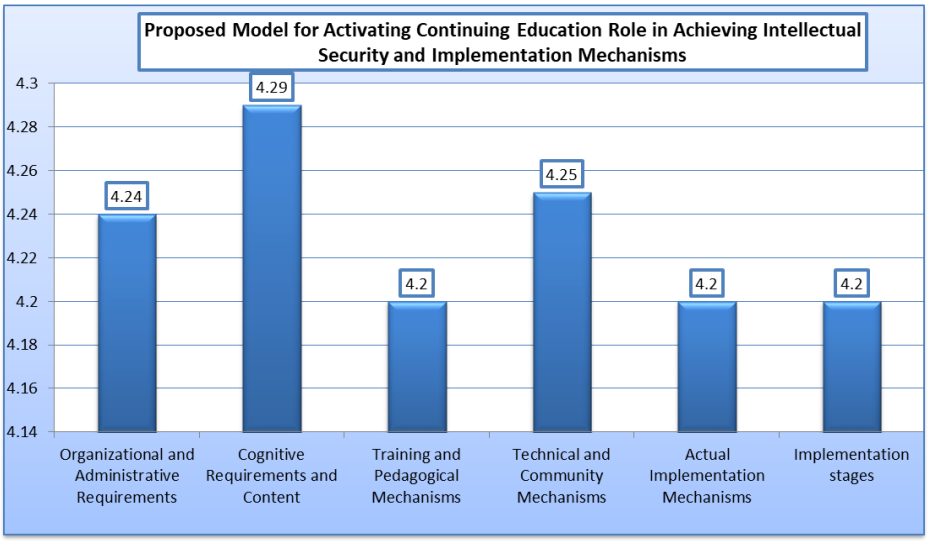


**Figure 11:** *Proposed Model for Activating the Role of Continuing Education in Achieving Intellectual Security and Its Implementation Mechanisms.*

## Discussion

### *Interpretation of Results*

Saudi Arabian adults engage in CE activities in order to increase their adaptability and thus ensure better resilience to both environmental and information manipulations (Alfaifi, 2024). The relevance of socio-cultural barriers (mean = 3.80) corresponds with the findings found in the research on issues of parity in both information and health literacy, as well as the pervasiveness of SM usage in the Saudi Arabian context (Alfawzan & Almulhim). The significant level of AD of the proposed CE information verification training program (mean score of 4.22) corresponds with its effectiveness in verifying information via short video training. The highest recorded mean value of knowledge or content criteria (mean = 4.29) reiterates the relevance of EA in CE in maintaining successfully the identity of intellectual security in the Saudi Arabian HE (Turkestani & Albash, 2022).

### *Theoretical and Practical Implications*

The incorporation of adult learning theories and intellectual security models can be enhanced by establishing that CE promotes critical thinking skills on the internet and encourages cultural identity. From a more application-oriented perspective, CE can contribute to the design of policy packages consisting of CE

programs combined with online citizenship education. CE can compensate for gaps in participatory skills as well as online literacy concerning incorrect information shared by adults on the internet (Alsaad & AlDossary, 2024).

***Comparison with Previous Literature***

The average score on intellectual transformation is relatively high (mean = 4.10), which corresponds with controlled research evidencing the benefit of integrating online reasoning training into the curriculum (McGrew & Breakstone, 2023). The role of social media as an obstacle (mean = 3.90) is supported by existing empirical research that reveals mixed literacy abilities among individuals dependent on platforms (Abdoh, 2022). Additionally, the average score on the importance of cultural identity (mean =4.45) is reflective of research on both a local level in Saudi Arabia, as well as globally, inasmuch as efficiently fostering learner-relator bonds plays a role in the enhancement of cultural identity (Htay et al., 2022).

***Methodological Insights***

Findings from this study validate the application of mirror research designs, whereby both local and international research data on digital literacy identity was assessed on a five-point validated scale with a representative population (Guath & Nygren, 2022). However, there could be setbacks in CE designs when research data is collected on various populations within a particular period, including the possibility of a ceiling effect or biased responses (Mirghani, 2020).

***Explanation of Similarities and Discrepancies***

The emphasis on identity preservation and the safe online engagement identified as a national priority within the Kingdom of Saudi Arabia could also play an important role in the current positive state of Digital CE (DCE) project effectiveness. The less significant aspect of barrier indicators could be attributed to the implementation of various projects proposed within national vision strategies, which often include authentication tools. There is proof that the abilities of individuals can reach successfully identifying misinformation through video-based interventions on a national level (Alenezi & Alfaleh, 2024; Alhilfi, 2025).

***Integrative Conclusion***

The Kingdom of Saudi Arabia acknowledges CE as an efficient enabling factor in the enhancement of intellectual security. This can be explained by the application of convergent evidence, which encompasses adult education practices, identity-building efforts, as well as cyber research efforts (Alnahdi, Alwadei, & Alharbi, 2024). The application of efficient cyber tools, which include validated video modules, has immense potential in helping realize the established goals of Vision 2030 (Alrudayni, 2025).

## Conclusion

It's pertinent to state that this research work not only validates the importance of dealing with intellectual security from within the context of the Kingdom of Saudi Arabia. The findings of this research make it clear that the significance of ongoing learning in awareness, critical thinking, or resilience building in the face of misinformation or intellectual threats cannot be denied. The findings of this research make it clear that an efficient ongoing learning program can prove to be the key to unlocking the improvement of an individual's analytical skills, preparedness, national identity, or adaptability in this ever-changing online world. From both theoretical and application perspectives, this research work provides an extended framework in terms of organisational, learning, or technological variables that will definitely contribute positively to intellectual security. The research work not only presents an extension of human knowledge in making it clear that the emphasis of knowledge-building or content development carries an immense significance which can be related to 'participating in communities' by establishing an intrinsic element of national strategic plans including 'Vision 2030.' The research work presents an application standpoint so that it will allow every policymaker, planner, or learner of this research work of making an efficient 'action plan' program through which intellectual resilience can be achieved effectively. The overall findings of this research work verify that the role of ongoing education carries significant importance in making an educated, safe, and adaptable society that can flourish in this information technological world by safeguarding its 'sound national heritages.'

## Recommendations

The Saudi education system will be required to incorporate specific courses on critical thinking, cyber literacy, and identity studies that could prepare the students better with the skills and readiness of knowledge concerning the realities of the modern world. The resources of education will mandate an update from the national security and culture departments of the government concerning the ever-changing values of society. Moreover, coordination among government departments, non-governmental entities, and technological tools will become indispensable on the interventionist level of developing an interactive learning program on cyberspace platforms that could help thwart misinformation diffusion while promoting constructive intellectual discussion among various individuals. The proposed faculty development program will focus on training in scenario learning activities, which will be backed by an ongoing assessment process on continually improving intellectual security. The assessed program will gradually introduce its rollouts by initiating it on a selective school level of compulsory education, where it will become feasible by implementing planned adjustments. S-launch on a below-primary school level of education will thus facilitate its progress on Vision 2030.

## Study Limitations

There are some limitations of this research that need to be considered. Firstly, the research was limited by its use of data derived from cross-sectional surveys in educational institutions in the Kingdom of Saudi Arabia, which, in effect, limited the research's generalisability. Secondly, the research was susceptible to data bias emanating from its use of perceptions of individuals on matters of experience. Thirdly, despite employing an innovative approach in the proposed framework of intellectual security education, the research did not undertake an investigation of the sustainability of the proposed measures.

## Study Implications and Future Directions

The current research work presents an effective, well-supported, and validated framework that shows how intellectual security can be positively enhanced through an overall educational process. The research findings provide valuable information on how the current education setting in Saudi Arabia can be developed. It was also found that the proposed factors of improvement in the curriculum, faculty members, and partnership with society can promote critical thinking skills, information technology literacy, and awareness of different cultures. The field of research will benefit from designs of a longitudinal nature that will help analyze the longer-term effectiveness of various interventions. There will be experimental testing of the proposed framework using different settings of learning. There is also immense potential of use of various technological developments in the field of intellectual security.

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