THE REALITY OF MEDIA TRAINING IN JORDANIAN SATELLITE CHANNELS IN LIGHT OF THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE TECHNIQUES FROM THE POINT OF VIEW OF TECHNICAL PERSONNEL - A FIELD STUDY

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ABSTRACT

The research aims to identify the reality of media training in Jordanian satellite channels from the point of view of technical cadres. The research population consisted of technical cadres working in governmental and private Jordanian satellite channels. The survey method was adopted by following the survey method on a simple random sample of (66) individuals from the community, using a questionnaire to collect data and information. The results showed that no one had taken a course on artificial intelligence tools. Also, it was revealed that 18% of the technical personnel working on satellite channels did not undergo any training courses during the last five years, while 7.5% underwent a high number of training courses if highlighted. The obstacles that hinder the qualification of technical personnel working in Jordanian satellite channels are that "the course topics are stereotypical and repetitive," then the obstacles related "the lack of well-thought-out training plans in the television channels," followed by those related to the training course times that do not suit the work conditions and pressures." The researcher suggests involving technical cadres in identifying their training needs and establishing training centers in Jordanian satellite channels.

Keywords: *Media Training, Jordanian Satellite Channels, Technical Personnel, Artificial Intelligence, Media.*

1. INTRODUCTION

The technologies used in television production have seen significant advancements in recent years, imposing substantial challenges on the media and technical personnel working in this field. One of the primary drivers of this transformation is the remarkable progress in artificial intelligence technology. Artificial intelligence has enhanced various aspects of the television and film production process including live broadcasting services, image quality, and equipment manufacturing. By analyzing vast amounts of data, predicting outcomes, and automating complex tasks, artificial intelligence enables the television and film production industry to achieve new levels of efficiency and innovation [1] [2].

Artificial intelligence is also revolutionizing image quality in television production. AI algorithms can analyze, modify, and enhance image sharpness and color accuracy. This development is particularly beneficial for photographers, filmmakers, and content creators who constantly strive to deliver the best content to viewers [3] [4].

An example of technological advancements in television production is AI-supported image enhancement techniques. These techniques can increase the resolution of low-quality images without affecting clarity or introducing external elements, allowing television production professionals to revive old footage and make it suitable for high-definition screens and modern platforms. AI has revolutionized television production by improving the quality of production equipment [5] [6]. Through advanced analytics and machine learning algorithms, AI can enhance the design of television production equipment, improve quality control processes, predict maintenance needs, increase energy efficiency, and create adaptable, autonomous equipment. The rise in the number of Arabic channels has heightened the importance of technical training, as audiences frequently compare the performance quality of Arabic

channels with that of Jordanian channels in terms of content, image, and sound [7] [8].

In Arab countries, a number of institutes have been interested in training media workers on artificial intelligence techniques. Among these institutes is the Al Jazeera Institute, which has allocated many workshops to provide participants with a comprehensive understanding of artificial intelligence and its basic principles through a combination of theory, practical training, and interactive exercises. Accordingly, workshop participants are promised to acquire the necessary knowledge and insights that will enable them to navigate the world of artificial intelligence effectively explore applications of artificial intelligence technologies used in media, and the ability to evaluate the performance of artificial intelligence systems. This study is significant as it highlights the reality of media training in Jordanian satellite channels from the perspective of technical personnel.

1.1 Research Problem

The research problem focuses on the necessity of training and qualifying the technical personnel working in Jordanian satellite channels. It emphasizes the importance of training them in modern technologies, especially those related to artificial intelligence, which has become essential in photography, audio-visual editing, graphic design, sound engineering, and lighting control processes.

1.2 Significance of the Study

The significance of this research lies in the scarcity of Arabic studies that address the technical personnel in satellite channels, despite their critical role in producing audio-visual content. Additionally, the rapid development of tools and techniques used in audio-visual editing, especially those related to artificial intelligence, underscores the need for such studies. This research aims to provide an updated database on the effectiveness of media training in Jordan and to offer recommendations and solutions to overcome the obstacles in training technical personnel, thereby improving the quality of media performance in Jordanian satellite channels.

1.3. Objectives of the Study

Technical personnel must constantly engage in workshops and training courses to keep up with the times and overcome challenges. Therefore, the main objective of this study is to assess the reality of technical training in Jordanian satellite channels and evaluate the adequacy of

training programs in facing digital evolution challenges. From this main objective, the following specific objectives emerge:

- Understand the current state of technical training in Jordanian satellite channels.
- Identify the training areas in which technicians have participated.
- Diagnose the obstacles hindering the organization of training courses and the qualification of technical personnel.
- Determine the extent of interest of Jordanian satellite channels in qualifying technical personnel to use artificial intelligence technologies.
- Determine solutions to address the obstacles in qualifying technical personnel and organizing training courses.

1.4. Research Questions

To evaluate the existing training programs in Jordanian satellite channels and their impact on the performance of technical personnel, the study raises the following questions:

1. What is the current state of training in Jordanian satellite channels?
2. What are the training areas in which technicians have participated?
3. What are the obstacles hindering the organization of training courses and the qualification of technical personnel?
4. How interested are Jordanian satellite channels in qualifying technical personnel to use artificial intelligence technologies?
5. What solutions address the obstacles in qualifying technical personnel and organizing training courses?

1.5. Terms and Concepts of the Study

Technical Personnel: Individuals involved in the technical aspects of television production, including photography, audio editing, video editing, graphic design, lighting control, sound control, television directing, and satellite broadcasting.

Operationally: Individuals working in technical aspects within Jordanian satellite channels.

Media Training: A systematic and planned effort to provide human resources in media institutions with specific knowledge, enhance their skills and abilities, and positively change their behavior and attitudes [9, p. 646].

Operationally: Training programs adopted by Jordanian satellite channels to impart

the necessary expertise, skills, and knowledge to their technical personnel to increase efficiency.

Jordanian Satellite Channels: Television channels that have obtained a license from the Jordanian Media Commission and broadcast from studios within the territory of the Hashemite Kingdom of Jordan.

Operationally: Channels licensed by the Jordanian Media Commission, broadcasting from studios within Jordan, concerned with Jordanian and Arab affairs, and airing television programs and news bulletins. According to the official website of the commission, there are 20 licensed satellite channels. Some channels focus on the internal affairs of other Arab countries like Iraq and Libya while others do not include regular television programs.

2. THEORETICAL FRAMEWORK

Technical personnel play a crucial role in television production, not only in aspects related to image and sound production but also in handling and creating media content [10] [11]. This underscores the importance of this study, which focuses on the reality of technical training in Jordanian satellite channels. Training provides personnel with additional skills, strength, and confidence. Moreover, it enhances media ethics, boosts the ability to face digital challenges, and keeps pace with developments in the digital environment. The factors influencing the performance of technical personnel can be summarized as follows: desire, talent, specialized education, and continuous training and qualification [12] [13]. Administrative issues related to the qualification of technical personnel have emerged, such as some managements not recognizing the importance of training programs, lack of financial resources allocated for training, inequitable distribution of training opportunities, not involving technical personnel in determining training needs, and the absence of qualification strategies.

2.1 Previous Studies

Upon reviewing the literature, it is evident that few studies addressed the reality of technical training in Jordan. This section reviews studies related to the topic. Wafi [9] aimed to understand the nature of media training received by communication officers in Palestinian media institutions and its relation to professionalism. It used a survey methodology, employing the gatekeeper perspective, and utilized questionnaires and personal interviews to collect data from 260 communication officers in Gaza, Palestine. The study concluded that training is essential in developing the media profession, with 90% of the sample attending various training courses. Some respondents cited work pressure and lack of time for not participating in training. The study found a significant correlation at the 0.05 level between the level of training received by Palestinian journalists and their professionalism.

Comparing the current study with Wafi's [9] on media training for Palestinian communication officers offers insights into training challenges and needs in different media sectors. The benefit of this comparison is recognizing shared obstacles like time constraints and the need for relevant, modern training. This study is unique in its focus on the lack of artificial intelligence training for technical personnel in satellite channels, which is a more technologically forward-looking concern. Furthermore, it uses a quantitative survey method focusing on technical cadres, offering more precise data on training gaps and obstacles. In contrast, Wafi's [9] study centers on journalists and employs a combination of surveys and interviews, making this study more data-driven and specialized in its technological focus.

Khurshid and Almashaqbeh [14] assessed the reality of media training in Jordanian media institutions from the perspective of journalists in Jordan. The research sample included 66 communication officers from various Jordanian media institutions. The study used a survey methodology and found that 43.9% of media institutions had dedicated training departments and 51.5% moderately prioritized organizing training courses. The study also revealed that 53% of the sample believed that the training significantly improved their digital skills, and 50% rated the use of AI applications in training as moderate. Major training obstacles identified included the lack of self-development interest among journalists and their exclusion from determining their training needs. The researchers recommended developing structured training plans, selecting competent trainers, and establishing dedicated training departments within media institutions.

This study is distinguished from the study of Khurshid and Almashaqbeh [14] in that it deals with the group of technical cadres, given that this category receives less attention than the category of journalists, in addition to the presence of a significant lack of research that deals with the

category of technical cadres working in Arab channels.

Harb [15] provided a future vision for adopting AI technologies in Palestinian satellite channels over the next decade (2021-2031). It examined practitioners' attitudes toward AI technologies and the factors influencing their adoption. The study surveyed 81 communication officers in Palestinian satellite channels and presented future scenarios for AI adoption. The findings highlighted that economic factors, due to the substantial financial resources required for AI technologies, and professional training were significant influences. The reference scenario (status quo) was the most likely for AI adoption by 2031, followed by the optimistic (reform) and pessimistic (collapse) scenarios.

This study focuses on the current integration of AI in media training, examining its effects on technical personnel whereas Harb [15] looks at the future adoption of AI in Palestinian satellite channels, projecting AI use over the next decade. Both studies highlight training as a key factor, but Harb [15] emphasizes economic challenges and the need for professional development. Harb's [15] study presents future scenarios for AI adoption, while this study provides insights into existing practices. The former offers a realistic outlook with gradual AI integration, while the latter looks at the present impact of AI on media practices. Both studies contribute valuable perspectives on AI's role in media development in the Arab world.

Rammal et al. [16] evaluated the impact of Metaverse technology on the evolving media landscape, focusing on Lebanese satellite channels. It surveyed 100 employees about their awareness and expectations regarding Metaverse technology. The study found no clear strategic intention from management, a good understanding of Metaverse technology, but incomplete knowledge of VR, AR, and MR. There were doubts and low expectations about the future impact of Metaverse technology on Lebanese channels.

Rammal et al.'s [16] work aligns with this study by highlighting important aspects of media innovation in the context of satellite channels. Both studies explore the impact of emerging technologies—artificial intelligence in our case and Metaverse technology in theirs—on media operations. This study offers valuable insights into how artificial intelligence is reshaping media training in Jordan, providing a forward-looking perspective on integrating new technologies. Similarly, Rammal et al. [16] shed light on the evolving media landscape through Metaverse technology, showcasing Lebanese satellite channels' awareness and readiness to embrace emerging digital tools. Both studies emphasize the need for further knowledge, fostering greater understanding among technical personnel. This focus on technological awareness enables channels to stay competitive and adapt to the changing media environment.

Amukuzi and Githinji [17] examined the influence of media training on journalist efficiency in Kenya. It analyzed training courses in Kenya and presented data narratively. According to managers from the Standard Group, a leading media training institution in Kenya, journalists lacked the practical skills required in the job market. The study recommended enhancing training course content and improving trainer competence.

Comparing this study with that in the Kenyan context offers valuable insights into how media training differs across regions and disciplines. The benefit lies in identifying common gaps in training, such as the lack of practical skills and technological integration, while highlighting region-specific issues like the absence of AI training in Jordan. This study stands out for its focus on technical personnel in satellite channels, emphasizing artificial intelligence as a critical training need. Additionally, it employs a quantitative survey method to gather precise data, providing a more measurable approach than the narrative data in the Kenyan study. This makes this study a more specific and data-driven exploration of training gaps.

Omoera and James [18] investigated the challenges of lighting and sound in television production in Nigeria, focusing on two community stations. It identified significant technical challenges faced by Nigerian community channels, particularly regarding lighting and sound equipment. The study concluded that most community channels lacked essential studio equipment and specialized lighting and sound engineers. It proposed several recommendations, including the need to qualify technical personnel and provide modern equipment to improve the quality of their broadcasts.

Comparing this study with that in the Nigerian context by Omoera and James [18] highlights the similarities in challenges faced by technical personnel in media production, such as the lack of adequate training and resources. The benefit of the comparison lies in understanding how training gaps and technical challenges

manifest in different contexts—Jordanian satellite channels versus Nigerian community stations. This study stands out for its specific focus on the impact of artificial intelligence on media training, providing a modern perspective on technological needs. Additionally, it uses a quantitative survey method to collect detailed, measurable data, whereas the Nigerian study primarily identifies issues related to equipment and specialized personnel. This makes this study more data-driven and forward-thinking in addressing contemporary media training needs.

The comparison between this study and other studies has provided valuable insights into the challenges and gaps in media training across different regions. Studies such as Wafi [9] and Khurshid and Almashaqbeh [14] have emphasized the significance of training in developing media professionals. However, the current research focuses specifically on technical personnel in satellite channels, a group that has been underrepresented in previous research. While both Wafi's [9] and Khurshid and Almashaqbeh's [14] studies touch on general media training and its impact on journalists, our research highlights the pressing need for artificial intelligence (AI) training, which is particularly relevant in today's technological landscape. These comparisons helped frame this study's unique approach, emphasizing the importance of AI in the training of technical personnel within Jordanian satellite channels.

The studies by Harb [15] and Rammal et al. [16] further informed the development of our research by shedding light on the future and current role of emerging technologies like AI and the Metaverse in media institutions. Harb's [15] exploration of AI's potential adoption in Palestinian satellite channels highlighted the economic and professional development challenges related to AI integration, which mirrored the concerns present in this study. Similarly, Rammal et al. [16] examined how Lebanese satellite channels approached emerging digital tools allowing us to recognize the importance of technological awareness and the necessity of fostering knowledge in technical personnel. This comparison underscored the need for this study to focus on the present state of AI integration and its implications for media training, making our research more time-sensitive and aligned with current industry needs.

While this study benefits from comparisons with international research, such as the work of Amukuzi and Githinji [17] on Kenyan media training, the Jordanian context reveals region-specific issues, notably the absence of AI training for technical staff. The Kenyan study illustrated the gap in practical skills and technological integration in training courses for journalists, offering a broader understanding of how training could be improved. In contrast, this study hones in on the specifics of AI training for technical personnel in satellite channels, addressing a gap that has not been previously examined in the Arab world. This regional distinction emphasizes the unique focus of our research on technical training, making it more targeted and timely.

3. METHODOLOGY

The research methodology followed in this study was a quantitative survey approach, which aimed to gather measurable data on the current state of technical training in Jordanian satellite channels. The main points of the methodology are as follows:

Survey Design: A structured questionnaire was developed to collect data from the technical staff of Jordanian satellite channels. The questionnaire included closed-ended questions to gather information on the types of training courses attended, barriers to training, and interest in using artificial intelligence technologies.

Sampling: The sample consisted of technical personnel working in various Jordanian satellite channels. The study targeted a broad representation of technical staff to ensure diverse perspectives on training issues.

Data Collection: The survey was distributed to a selected sample of technical staff. Responses were collected through direct surveys, allowing for efficient data gathering and quantifying training gaps, obstacles, and areas needing improvement.

Data Analysis: The data collected from the survey were analyzed using statistical methods to identify patterns and correlations. The analysis focused on identifying training participation trends, obstacles to effective training, and the readiness of staff to adopt new technologies like artificial intelligence.

The methodology aligns with a quantitative research framework, allowing the study to gather objective, data-driven insights into the training practices and challenges faced by technical personnel in Jordanian satellite channels [19].

3.1 Research Design

This study is a descriptive research endeavor, focusing on examining and analyzing the current state of a particular phenomenon [20] [21] [22]. It employs the media survey methodology, a systematic scientific effort to describe a phenomenon by analyzing the relevant information [23]. The researcher utilized a survey method (questionnaire) to assess the effectiveness of training and its impact on the professional practices of technical personnel.

3.2 Population and Sample of the Study

The study population consists of technical personnel working in Jordanian media institutions. A simple random sample representing the research population was selected, comprising 66 individuals based on statistical standards for sample selection. The number of technical personnel working in Jordanian channels is 343, and the response rate is 62%.

The sample distribution was organized by age, as age directly relates to the ability to use modern technical tools and the desire for learning and development. It was also categorized by job role due to the varying nature of training programs associated with different positions.

Table 1: Distribution of Study Sample by Age and Field of Work

Age Group	Frequency	Percentage
Less than 25 years	6	9.1%
25 to 35 years	24	36.4%
36 to 44 years	12	18.2%
45 years and older	24	36.4%
Total	66	100%
Field of Work	Frequency	Percentage
Photography	48	72.7%
Video and Audio Editing (Montage)	6	9.1%
Design	6	9.1%
Sound Engineering, Broadcast Engineering, and Lighting Engineering	6	9.1%
Total	66	100%

Table 1 shows that 54.6% of the study sample, representing the technical workforce in Jordanian satellite channels, were between the ages of 25 and 44, while 72.7% of the study sample are skilled in photography, aligning with the high proportion of photographers in other technical fields of work.

3.3 Tool of the Study

The questionnaire included 23 items divided into four domains, in addition to demographic questions. The first domain represented the volume of training courses in media attended by technical staff in Jordanian satellite channels over the past five years and their topics.

The second domain addressed the degree of benefit from the training courses attended by the technical staff in Jordanian satellite channels over the past five years and the availability of modern digital technologies and artificial intelligence techniques used or learned during the training. The third domain focused on identifying obstacles to conducting training courses from the perspective of the technical staff in Jordanian satellite channels. The fourth domain represented the suggestions of the technical staff in Jordanian satellite channels for developing media training.

A five-point scale (very high (5), high (4), moderate (3), low (2), very low (1)) was used to measure the degree of benefit from the training courses attended by the technical staff in Jordanian satellite channels and the availability of modern digital technologies and artificial intelligence techniques used or learned during the training. Meanwhile, a five-point scale (strongly agree, agree, neutral, disagree, strongly disagree) was used in the third domain to measure obstacles to conducting training courses.

The questionnaire was developed after reviewing several previous studies, including Khurshid and Almashaqbeh's [14] study titled "The Reality of Media Training in Jordanian Media Institutions from the Journalists' Perspective - A Field Study," and Harb's [15] study titled "A Future Vision for the Adoption of Artificial Intelligence Techniques in Palestinian Satellite Channels During the Next Decade (2021-2031)."

3.4 Validity and Reliability for the Questionnaire

The questionnaire was reviewed and evaluated by several media and communication experts, including Professor Ezzat Hijab from the Department of Journalism and Media at Middle East University, Dr. Mohammed Mahroom, Assistant Professor in the Department of Radio and Television at Yarmouk University, Dr. Abdullah Al-Jalabneh, Assistant Professor in the Department of Digital Media at Zarqa University, and Dr. Ruba Zaidan, Assistant Professor in the Department of Digital Media at Al-Balqa Applied University. The experts provided valuable feedback on its structure, language, clarity, and item alignment.

The overall structure was commended for its logical flow, however; it was suggested to reorganize some items within the domains to

enhance coherence and reduce redundancy. The experts also recommended grouping similar items for better alignment and clarity. In terms of language, the items were found to be clear and appropriate, but minor revisions were proposed to simplify complex phrases and ensure concise wording. Additionally, technical terms were clarified to avoid potential misinterpretations. Some items were recommended for shifting between the two domains to reflect their intended focus better, such as reassigning items between "Obstacles to Course Holding" and "Measures to Address Training Course Obstacles." To enhance clarity and specificity, vague or overly broad items were refined, with suggestions to include examples or additional context where necessary. The five-point Likert scale was deemed appropriate, but experts recommended adding a brief explanation at the beginning to ensure consistent understanding among respondents. These suggestions significantly refined the questionnaire, ensuring its effectiveness and alignment with the study's objectives.

To ensure the validity and reliability of the questionnaire, it was piloted on a sample of 30 respondents who were not part of the main study sample. This pilot test helped refine the questionnaire, ensuring its clarity, relevance, and consistency in measuring the intended constructs. The feedback obtained during the pilot phase was instrumental in finalizing the study tool for data collection.

Table 2: Validity and Reliability Coefficients

Domain	Pearson Correlation (Validity)	Cronbach's Alpha (Reliability)
Obstacles to Course Holding	0.88	0.86
Measures to Address Training Course Obstacles	0.89	0.87
Overall Questionnaire	0.89	0.87

Table 2 demonstrates that the questionnaire used in the study is valid and reliable, with strong statistical evidence supporting its suitability for research. The domain "Obstacles to Course Holding" shows a Pearson correlation coefficient of 0.88 and a Cronbach's alpha of 0.86, while the domain "Measures to Address Training Course Obstacles" has a Pearson correlation of (0.89) and a Cronbach's alpha of (0.87). These values indicate a high level of validity, meaning the questionnaire items effectively measure the intended constructs, and strong reliability, ensuring consistent responses

across different samples or settings. The overall questionnaire's validity (0.89) and reliability (0.87) further confirm its robustness, making it a dependable tool for exploring the challenges and solutions related to training courses. These results highlight that the instrument is well-designed, providing confidence in its ability to yield meaningful and credible findings for the study.

3.5 Data Analysis

The statistical analysis methods used to analyze the data for the study involved several key approaches. Descriptive statistics were employed, including frequency and percentage analysis to summarize categorical data, such as the number of training courses attended and the perceived benefits from training. Mean and standard deviation were used to evaluate central tendencies and dispersion for continuous variables or Likert-scale responses, such as the extent of obstacles and the measures taken to address training issues. Additionally, items were ranked based on their means to identify the most significant obstacles or effective measures, such as ranking the repetitive nature of course topics as a prominent challenge. Comparative analysis was also conducted to compare different response categories or domains, such as assessing the benefits of training courses across varying levels of experience or perceived training quality.

4. RESULTS AND DISCUSSION

4.1 The First Domain: Evaluation of the Training Situation in Jordanian Satellite Channels

Table 1 shows the number of training courses in media attended by the technical staff in the past five years.
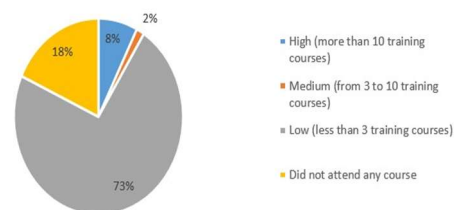

Figure 1: Training Courses Attended by Technical Staff in Media: Past Five Years

The respondents' responses showed that 18% of the technical staff working in satellite channels did not attend training courses, while 73% stated that they attended fewer than three training courses. Meanwhile, 8% attended a high number of training courses. These results are

consistent with the study conducted by Omoera and James [18], which emphasized the importance of providing extensive training for technical staff overseeing lighting and sound in television production. Figure 1 shows that 90.9% of the technical staff in Jordanian satellite channels attended fewer than three courses during the past five years, which witnessed significant development in television production, especially with the integration of artificial intelligence tools in all stages of television production, including scripting, shooting, lighting, sound adjustment, editing, presentation, and direction. The results indicate that only 2% of the study sample attended a moderate number of training courses. These findings suggest that the management of Jordanian satellite channels is not prioritizing the qualification of their technical staff to overcome the challenges of digital transformation imposed on all media outlets, especially satellite channels. Table 3 shows the number of training courses in media attended by the technical staff in the past five years.

Table 3: Media Training Attendance over Past Five Years

Degree of Benefit	Frequency	Percentage
High	23	34.8%
Medium	19	28.7%
Very low	24	36.3%
Total	66	100%

The respondents' responses indicated that 36% of the technical staff working in Jordanian news channels believe that their degree of benefit from the training courses is very low, while the percentage of those who think that their degree of benefit from the training course is high reached 36.%. Meanwhile, the negative responses from the staff who answered that the degree of benefit from the training courses was medium reached 28.7%. These results contradict the study conducted by Khurshid and Almashaqbeh [14], which indicated that 74.3% of Jordanian journalists participating in the study confirmed the usefulness of the courses they received in their journalistic field, indicating that the courses attended by journalists are more beneficial than technical courses. Table 4 shows the degree of artificial intelligence applications used or learned during training.

Table 4: Artificial Intelligence Application Availability during Training

Availability Degree of AI Tools and Applications	Frequency	Percentage
High	0	0%
Medium	12	18.2%
Low	54	81.7%
Total	66	100%

The respondents' responses indicated that 81.7% of the technical staff working in the Jordanian satellite channels believe that the availability of artificial intelligence applications used or learned during training is low. Meanwhile, the percentage of those who think that the availability of artificial intelligence applications used or learned during training is medium reached 18.1%. Additionally, those who think that the degree of artificial intelligence applications used or learned during training is as high as 0%, confirm the lack of interest from the management of the Jordanian satellite channels in employing artificial intelligence techniques in the television production process.

These results align with the previous research, which found that there is no clear strategic intention from the management of Lebanese satellite channels to introduce artificial intelligence technologies into the television production process, especially regarding the introduction of Metaverse technology. The study also indicated low expectations regarding the future impact of Metaverse technology on Lebanese channels. These results come in the invasion context of artificial intelligence technology into all stages of television production. Experts confirm that employing artificial intelligence tools requires training technical staff to deal with modern tools in a way that serves the final television product.

4.2 The Second Domain: The Training Domains in which the Technicians Working in the Jordanian Satellite Channels Participated.

Figure 2 shows the training domains in which the technicians working in the Jordanian satellite channels participated.
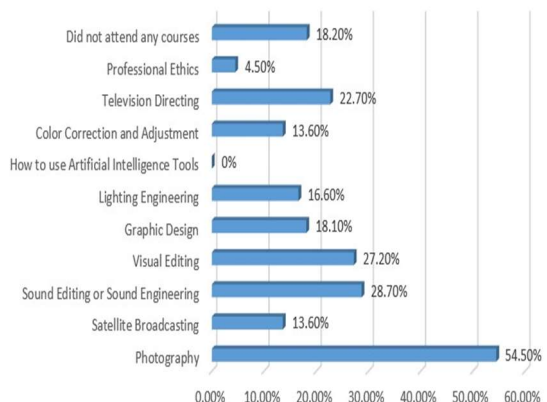

Figure 2: Training Domains of Technicians in Jordanian Satellite Channels

Figure 2 shows that 54.5% of the study sample attended courses related to photography, while 13% of the technical staff working in the Jordanian satellite channels attended courses on satellite broadcasting. The study also indicates that 28.7% of the sample attended training courses related to editing and sound engineering, a percentage close to those who attended training courses on visual editing. This percentage is not high considering that possessing knowledge in editing skills is essential for technical staff positions. The results show that 18.2% of the technical staff working in the Jordanian satellite channels attended training courses related to design skills, while the percentage of those who attended courses on lighting engineering was 16.6% despite the importance of possessing these skills for most technical positions. The results also indicate that the percentage of technical staff who attended training courses related to artificial intelligence tools was 0%. These results are consistent with the results in Figure 2, which indicated that the percentage of those who believe that the degree of artificial intelligence applications used or learned during training was 0%.

In addition, Figure 2 shows that technical staff working in the satellite channels and attending training courses related to television directing were 22.7%, while the percentage of those who attended courses related to professional ethics did not exceed 4.5%. Additionally, 18.2% did not attend any training course in various technical fields. These results indicate a shortage in the number of technical courses in the Jordanian satellite channels, especially in courses related to employing artificial intelligence tools.

4.3 The Third Domain: Obstacles Hindering the Holding of Training Courses

Table 5 shows the means and standard deviations for the sample's response regarding the domain of obstacles hindering the holding of courses.

Table 5: Means and Standard Deviations for Obstacles to Course Holding

No.	Item	Mean	S.D	Rank	Level
1	Courses' topics are typical and repetitive	2.53	0.71	1	High
2	Lack of well-planned training plans in institutions	2.52	0.71	2	High
3	Timing does not suit work conditions and pressures	2.51	0.61	3	High
4	Weak interest of media institutions in training as a priority	2.51	0.61	4	High
5	Technicians not involved in determining their training needs	2.55	0.71	5	High
6	Absence of scientific evaluation of courses by participants	2.55	0.71	6	High
7	Technicians' lack of interest in self-development	2.32	0.61	7	Average
8	Inefficiency of trainers	2.32	0.61	8	Average
9	No correlation between course vocabulary and technicians' specializations	2.20	0.66	9	Average
10	Lack of modern training technologies	2.12	0.75	10	Average
11	Training rooms are not suitable	1.41	0.75	11	Low
-	Overall Mean	2.28	0.46	-	Average

Table 5 shows that the overall mean for the sample's response regarding the obstacles hindering the holding of courses was (2.28), within the average level. "Courses' topics are typical and repetitive" ranked first, followed by "Lack of well-planned training plans in institutions," indicating that technical staff perceive that training programs require well-thought-out planning by the satellite channels' administrations. On the other hand, the item "Training rooms are not suitable" ranked last (1.41), preceded by the item "Lack of modern training technologies" with a mean of (2.12).

The main obstacles hindering the training of technical personnel working in Jordanian satellite channels are "repetitive and patterned course topics," followed by obstacles related to "lack of well-thought-out training plans in television channels," and then by obstacles on "training course timings that do not fit work conditions and pressures."

4.4 The Fourth Domain: Measures to Address Training Course Obstacles

Table 6: Means and Standard Deviations for Address Training Course Obstacles

No.	Item	Mean	S.D.	Rank	Level
1	Considering training as part of job performance assessment	2.72	0.71	1	High
2	Creating moral and material incentives for outstanding performers	2.62	0.71	2	High
3	Selecting competent trainers	2.51	0.69	3	High
4	Developing well-thought-out training plans	2.51	0.67	4	High
5	Full dedication to the training course	2.51	0.66	5	High
6	Involving technicians in developing training plans	2.25	0.61	6	Average
7	Identifying training needs through research	2.11	0.71	7	Low
8	Agreement with local and international training centers	2.11	0.72	8	Low
9	Conducting evaluations for the courses	2.11	0.75	9	Low

| - | Overall mean | 2.37 | 0.46 | - | Average |

From Table 6, the measures to address obstacles in conducting training courses include considering training as part of job performance evaluation as the most prominent measure, followed by other measures, such as creating moral and material incentives for outstanding performers, selecting competent trainers, developing well-thought-out training plans, and full dedication to the training course.

In addition, Table 6 shows that the mean of the sample's response regarding measures to address obstacles in conducting training courses reached (2.37), within the average level. The item "Considering training as part of job performance assessment" ranked first, followed by the item "Creating moral and material incentives for outstanding performers." This indicates that technical staff sees the necessity of linking training to performance evaluation and providing both moral and material incentives. The item "Conducting evaluations for the courses" preceded the item "Agreement with local and international training centers" with a mean of (2.11).

"Considering training as part of job performance assessment" ranked first among all items related to measures to address obstacles in conducting training courses. Then, the item "Creating moral and material incentives for outstanding performers" ranked second, indicating the importance of motivating technical staff to develop their skills by linking training courses to job performance evaluation and providing meaningful and material incentives.

5. CONCLUSION AND RECOMMENDATIONS

This current study focuses on the specific training needs of technical personnel in satellite channels, a group often overlooked in prior research. While studies like Wafi [9] and Khurshid and Almashaqbeh [14] address training for journalists, this study highlights the pressing need for artificial intelligence (AI) training for technical staff, emphasizing the gap in AI integration within Jordanian media. This distinction allowed this study to address challenges and training gaps relevant to today's technological environment, unlike other studies that explored general media training.

Additionally, comparisons with studies such as Harb [15] and Rammal et al. [16] helped shape our research by showcasing the growing influence of AI and other emerging technologies in media. Harb's [15] work on the future of AI adoption in Palestinian media and Rammal et al. [16] focus on Metaverse technology in Lebanon emphasized the need for awareness and training in these areas. This study took a more immediate, practical approach, concentrating on the current state of AI integration in Jordanian satellite channels, highlighting the necessity for technical personnel to be well-versed in these emerging technologies.

The comparison with international studies, including Amukuzi and Githinji's [17] work on media training in Kenya and Omoera and James' [18] study on Nigerian community stations, further reinforced the unique focus of this study. While both studies discussed general media training gaps, particularly around practical skills and resources, the current study zeros in on the specific need for AI training in technical media roles. This distinct focus on AI-driven media training for technical staff, supported by a quantitative survey approach, makes our research particularly relevant and forward-looking in addressing the current and future needs of Jordanian satellite channels.

The study found that 18% of the technical staff in Jordanian satellite channels have not attended training courses. Moreover, 72% stated that they attended fewer than three training courses, while 7.51% attended a high number of training courses. This indicates a lack of interest from many Jordanian satellite channel administrations in training and development processes for their staff, which directly affects the media performance of these institutions and their ability to keep up with the rapid developments in the media landscape. 54.5% of the study sample attended courses related to photography, while only 13% attended courses on satellite broadcasting techniques. The study also found that 28.7% of the sample attended courses on editing and sound engineering, a proportion similar to those who attended courses related to visual editing. This indicates a significant shortage of training courses related to audio and visual editing skills despite the importance of possessing these skills for various technical positions. The results showed that no one had taken a course on how to use Artificial Intelligence Tools.

The most prominent obstacles hindering the qualification of technical staff working in Jordanian satellite channels are "repetitive and patterned course topics," followed by obstacles related to "lack of well-planned training plans in

television channels," and then obstacles related to "inconvenient training schedules that do not suit work conditions and pressures." These obstacles can be overcome if the administrations of Jordanian satellite channels desire to qualify their staff and enhance their capabilities to utilize modern digital tools in television production. It is important to motivate technical staff to develop their skills by linking training courses to job performance evaluation and providing meaningful and material incentives to overcome the obstacles hindering the conduct of training courses. Additionally, the importance of selecting competent trainers and developing well-planned training plans is emphasized.

In general, training programs require greater attention from the administration of satellite channels to motivate staff to participate in these programs. Moreover, the study results indicate insufficient diversity in training courses, suggesting a weakness in technical training that does not align with the level of competition among media outlets and the continuous evolution of digital media tools in television production.

The study achieved its first objective of understanding the current state of technical training in Jordanian satellite channels by surveying technical staff and gathering data on their training experiences. It found that a significant portion of staff had either not attended training courses or had attended very few, highlighting a lack of emphasis on training from channel administrations. By analyzing the responses regarding training participation, the study could assess the extent to which technical staff in satellite channels were being developed and how their training needs were being addressed.

To identify the specific training areas in which technicians have participated, the study examined the types of courses attended by the technical staff. The results showed that while a majority had attended courses related to photography, there was a significant shortage of training in essential technical areas like satellite broadcasting and audio-visual editing. By categorizing the training topics and comparing them to the evolving needs of the industry, the study provided a clear picture of the gaps in training content and the skills required for modern media production.

The study also diagnosed several key obstacles hindering the organization of training courses and the qualification of technical personnel. The survey identified issues such as repetitive course topics, lack of well-structured training plans, and inconvenient schedules that conflicted with work pressures. The study further investigated the interest in training staff to use artificial intelligence tools and found a clear gap. By understanding these barriers, the study was able to propose solutions, such as better planning of training programs, motivating staff with incentives, and selecting competent trainers to overcome the existing challenges and improve technical qualifications.

The study's limitations include the relatively small sample size of technical staff in Jordanian satellite channels and the limited geographical scope, as it focused solely on Jordan. These factors may impact the generalizability of the results to other countries or media sectors. Moreover, the lack of detailed data on the specific content and quality of training programs could also limit the conclusions about the effectiveness of the training courses offered.

Despite these limitations, the study offers valuable insights into the current deficiencies in training for technical staff in Jordanian satellite channels. It highlights significant gaps in training areas, such as audio-visual editing and artificial intelligence, and provides a foundation for improving training structures. The results can help guide future initiatives to better align training programs with industry needs and foster the development of more skilled technical personnel in the media sector.

5.1 Recommendations

The study recommends:

- Involving technical staff in identifying their training needs will increase their confidence in the effectiveness of training programs, thus directly affecting these programs. This can be achieved by conducting needs assessments and surveys to understand the specific training needs of technical personnel working in Jordanian satellite channels.
- Establishing training centers within Jordanian satellite channels and training internal trainers will increase the scope and effectiveness of training programs. These centers can tailor training programs to the specific needs of the workforce and the evolving tools used in television production.
- Developing a strategic plan for the qualification of technical staff that aligns with the development in all stages of television production (pre-production, data gathering, filming, lighting and sound adjustment, writing, audio and visual

editing, presentation, and directing). This strategic plan should outline clear objectives, timelines, and methods for training implementation and evaluation.

- Diversifying technical training fields to include all skills related to television production. This ensures that technical staff are equipped with the necessary knowledge and skills to perform various tasks in television production effectively.

5.2 Future Research

Future research should expand the sample size and geographical scope beyond the Jordanian satellite channels to include a more diverse range of media institutions from different regions, including other Arab countries and international contexts. This would provide a broader understanding of the training needs and challenges faced by technical staff across various media sectors. Additionally, evaluating the effectiveness of existing training programs could offer valuable insights into their impact on staff performance and media output. Assessing the long-term effects of training on skill development and the integration of new technologies could help optimize training strategies and make them more aligned with industry demands.

Another key direction for future research is to explore the integration of artificial intelligence (AI) in media training programs. Given the gap identified in AI training, future studies could focus on the current state of AI adoption in training programs, examining the benefits, challenges, and strategies for incorporating AI into technical staff development. By addressing these gaps, future research could provide a more comprehensive view of media training, offering actionable insights for enhancing the skills and qualifications of technical personnel to keep up with technological advancements in the media industry.

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