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A ROLE OF EDUCATIONAL COUNSELLING IN PREPARING STUDENTS FOR UNCERTAIN CAREER FUTURES IN THE AI ERA

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Abstract
Uncertain future careers have many plans, but no clear direction, and this context has been increasingly emerging in Generation Z. This paper elucidates how educational counselling supports students in preparing for uncertain career futures in the era where artificial intelligence is in the hands of every individual. With a dramatic increase in technology and changes in the job market, learners often feel anxious and confused about their career paths. The study focuses on understanding learner's perceptions and experiences of counselling services in their institutions for helping them develop skills such as adaptability, confidence, social skills, and decision making. A qualitative exploratory approach harnesses interviews with university students to gather in-depth insights. The study is grounded in a theory of career construction that emphasizes career adaptability in a changing era. The findings highlight the important role of counselling in reducing career-related anxiety, improving self-awareness, and making learners look forward to flexible and realistic career choices. The source of data specifically includes semi-structured interviews with pre-graduate university students. The findings suggest that learners have their own perspectives on finding jobs that further polish their AI skills in an AI-driven world. Subjects include university students who are currently enrolled in their graduation program for semi-structured interviews to collect data about their future career plans and the uncertain career paths they are afraid of. Ultimately, this study suggests that effective counselling for career choice can help learners navigate more effectively and prepare them for upcoming challenges in an AI-driven world.

1. INTRODUCTION:

The advancement of artificial intelligence, digital technologies, and automation has irreversibly transformed the educational and employment landscape. In the 21st century, learners are no longer preparing for fixed and predictable career paths as technology innovation rapidly continues to reshape the skills for work and professional skills. Traditional careers are evolving, but whole new careers are emerging requiring creativity, digital literacy, adaptability, critical thinking, communication, and problem-solving skills. As a consequence, learners rapidly face uncertainty regarding their future careers, professional identities, and long-term career adaptability and stability. This increasing uncertainty has

developed a need for effective educational counselling that helps and guides learners to enable them to make informed, flexible, adaptable, and future-oriented career decisions based on their personal experiences and the demanding needs of this artificial intelligence age.

Counselling not only addresses academic difficulties, but it also helps learners focus on understanding changing career paths and their demand, and to prepare them for future complex challenges. Educational counselling provides a supporting role in learner's academic guidance, emotional support, social well-being, and professional tasks. The role of counselling is to help learners identify their weak spots and transformed it into strengths, interests, values, and abilities. Furthermore, it develops adaptability and resilience in uncertain environments and situations. In this artificial intelligence era, the services provided by counsellors are important as they cater to learners who experience anxiety, fear, pressure, and confusion related to technological advancements and future employment opportunities.

The need for 21st-century skills has become a central part of educational as well as career development. Basic skills include collaboration, communication, creativity, adaptability, emotional intelligence, critical thinking, and digital skills. Educational institutions are considered and expected to prepare learners with practical and psychological skills needed for surviving workplaces. This study specifically focuses on constructing the basic needs of individual learners for contributing to the artificial intelligence world. The study harnesses career construction theory by Mark Savickas, which focuses on career adaptability and the individual's ability to construct meaningful careers in changing environments. The theory highlights the major aspects such as concern, control, curiosity, and confidence, enabling learners to cope with uncertain career situations. In the context of artificial intelligence and technological transformation, career construction theory provides a framework for understanding how counselling can support learners in adapting to future challenges related to uncertain future careers. Additionally, the study is supported by social cognitive theory by Albert Bandura, the concept of self-efficacy, confidence, and belief in one's own abilities that influence career adaptability and decision-making.

Data collected through semi-structured interviews, which provide participants with the opportunity to open up and discuss their experiences, fears, opinions, and expectations regarding educational counselling and future careers. The study focuses on university students who are currently experiencing concerns and uncertainties related to career planning. Students, particularly in Pakistan, face a hard time pursuing a career related to their skills and interests, but a lack of counselling and parental support leads to uncertainty. Purposive sampling used to select participants who can provide meaningful and relevant insights and are serious about their future careers. The collected data were analyzed using thematic analysis to identify themes and patterns related to career adaptability, emotional stability, counselling support, and awareness of advancement and scope in career changes.

The significance of the study is to contribute to the relationship among educational counseling, technological advancements, and career development, a topic of hot discussion among students and counselors in the modern era. The findings may help educational institutions, students, counselors, and policymakers understand the importance of counseling services in preparing learners for an uncertain and changing professional environment. Furthermore, the study highlights the need for educational systems to provide strong counseling services that promote adaptability, stability, resilience, and lifelong learning in the modern era of artificial intelligence. Many students are currently enrolled in universities, and many educational institutions that provide counselling and career guidance services are uncertain about their own skills and interests for pursuing their choice, need counselling and understanding of artificial intelligence for their future uncertainty about their career decision-making. This study

provides answers to all those who are motivated and confident enough to face the challenging world of artificial intelligence and a rapidly changing environment and technological advancement in the modern era.

Research objectives

The research objectives for the synthesis of this study are:

1. To explore the role of educational counselling in preparing learners for uncertain future careers in the era of artificial intelligence.
2. To understand the challenges learners experience while planning their future careers in a rapidly changing technological environment.
3. To identify how educational counselling supports the development of 21st-century skills such as adaptability, critical thinking, communication, and decision making.

Research questions

The synthesis of this study is based on the following research questions:

1. How does educational counselling help students manage uncertainty related to future career opportunities?
2. What challenges do learners experience regarding career planning and preparedness in a technologically changing world?
3. How do counselling services influence learner's 21st-century skills such as adaptability, communication, critical thinking, and decision making?

2. Literature Review

The rapid development of artificial intelligence (AI) and digital technologies has transformed educational institutions, the educational system, career construction, and workforce experience across the world. Scholars have increasingly emphasized that today's students are entering a highly unpredictable labor market where technological change, automation, and digital transformation continuously reshape future employment opportunities. In this changing world, educational counselling has emerged as a support system that helps students adapt to career uncertainty, develop future-oriented skills, and make informed career decisions. Regarding recent studies, traditional career guidance models are no longer sufficient for preparing learners for modern employment. A systematic literature review by *Yupelmi et al. (2024),* artificial intelligence technologies are changing learner's career orientation and forcing educational institutions to rethink career choosing strategies. The study stated that many traditional jobs are threatened by AI automation, while new professions require adaptability, digital literacy, and critical thinking skills. The scholars further argue that educational institutions must support learners in managing career opportunities and pursuing their career of interest in this changing and developing modern artificial intelligence (AI) era.

Particularly, scholars have explored the increasing impact of artificial intelligence (AI) within career counselling itself. A recent study conducted by *Sarmurzin et al. (2026),* explored the implementation of artificial intelligence (AI) in university career counselling services. The study found that artificial intelligence (AI) based systems, chatbots, and recommended technologies are increasingly being used to provide learners with personalized career guidance and career planning strategies and support to pursue them. However, the scholars fear that excessive dependency on automated systems may hinder learner's independent decision-making and vocational identity development. The review strongly suggests that a perfect balance between technological tools and human counselling is necessary to preserve learner's emotional support, personal guidance, adaptability, and stability in counselling services for their future career uncertainty. The study of career adaptability has become a key factor in discussions about career preparation in uncertain situations. Career adaptability refers to an individual's readiness to manage career opportunities, changing job demands, and future uncertainties. According to *Padan and Indraprasta (2025),* career adaptability is one of the beneficial psychological resources for learners in Industry 5.0 and technologically evolving societies. The review results indicate that educational and

counselling programs can significantly strengthen learner's concern for future planning, confidence in decision-making, curiosity about career opportunities, and control over career development. These corners are connected with the career construction theory developed by *Mark Savickas.*

Many scholars have also accentuated the emotional and psychological challenges learne's experience due to career uncertainty in the artificial intelligence (AI) era. *Maree (2024)* asserts that modern career counselling must be improved to go beyond traditional occupational guidance and alternatively focus on helping learners construct meaningful and adaptable career singularities. The study features the need for groundbreaking counselling approaches that grapple with emotional resilience, self-awareness, adaptability, and life-long learning in a swiftly modifying professional framework.

In spite of growing research on artificial intelligence (AI), career counselling reveals gaps. Many studies focus primarily on technological systems, predictive models, or artificial intelligence implementation frameworks, preferably then learner's lived experiences and perceptions regarding counselling support in uncertain career situations.

3. Methodology

3.1. Research Design

This study espoused a qualitative exploratory research design to investigate the role of educational counselling in preparing students for uncertain career futures in the artificial intelligence (AI) era. A qualitative approach was considered appropriate due to the study aimed to explore learner's perceptions, concerns, experiences, and expectations related to career and counselling. The design of the study facilitated gaining a deeper understanding of how counselling contributes to career preparation and career development in a rapidly changing technological environment. The design was selected to meet the emerging need and concerns for the learners who are stuck between to do or not.

3.2. Data Collection

The data collected for the research constitutes a sample of the 30 participants from the university. (University of Gujrat). The individuals with the most concerns and who are highly motivated for their career were selected for the data collection. Semi-structured interviews take place in the classroom where learners openly share their insights, concerns, difficulties, and other experiences and hurdles they go through on their way to becoming an active part of the technological world. Semi-structured interviews were selected because they allow flexibility in questioning while also enabling participants to freely express their thoughts, concerns, and experiences related to their future career and counselling support.

3.3. Data Collection Sources

The primary source of data consisted of articles, journals, research reports, books, and literature related to counselling, career adaptability and stability, artificial intelligence (AI), and career development learner's interview responses during semi-structured interviews. Secondary sources include theories.

3.4. Theoretical framework

The study is grounded in career construction theory developed by *Mark Savickas.* The theory provides an understanding of how individuals prepare for and are able to adapt changing career environments. In the modern era of artificial intelligence (AI), automation, and technological transformation, learners are facing uncertainty related to future careers, employment, professional adaptability, and stability. Career construction theory is highly relevant to this study because it explains how individuals actively construct their careers through experience, adaptability, self-awareness, and readiness to adapt to the changing requirements of the modern world.

According to *Savickas,* career development is not limited to selecting a single occupation of interest, but rather an ongoing process provide continuously adaptability to social, technological, economic, and situational changes. The theory

emphasizes that career success in uncertain environments depends on one's ability to develop career adaptability. Educational counselling provides a handful of strengths in adaptability by helping learners understand their strengths, goals, interests, and future opportunities. Career adaptability in the concept of career construction theory consists of four dimensions: *concern, control, curiosity, and confidence.* These dimensions are particularly helpful in understanding how learners prepare for uncertain career paths in the artificial intelligence (AI) era.

3.4.1. Concern

Concern refers to an individual's awareness and preparation for future career development. Learners who demonstrate concern are more likely to think seriously about future opportunities and challenges. Educational counselling helps learners become future-oriented by motivating career planning, awareness of changing labor market trends, technological advancements, digital literacy, and emerging professions influenced by artificial intelligence and automation.

3.4.2. Control

Control represents an individual's ability to take responsibility for career-related decisions and actions. In an uncertain career situation, learners may experience concern or anxiety related to career planning. Educational counselling helps as a support system in developing decision-making abilities, self-discipline, and personal responsibilities towards their career goals. Therefore, through counselling, learners become more capable of making their informed decisions and independent career choices.

3.4.3. Curiosity

It involves exploring different career opportunities, learning experiences, and possible future paths. In the modern era of artificial intelligence (AI), many traditional employment sectors are evolving while new digital careers continue to emerge. Educational counseling encourages learners to explore a vast catalog of diverse career possibilities, understand technological advancements, and remain open to lifelong learning and a professional career in the modern era.

3.4.4. Confidence

It refers to an individual's belief in their ability to overcome difficulties and achieve their goals. Learners sometimes experience concern and uncertainty related to future employment because of technological competence and the automation world. Educational counseling can provide strength in learner's confidence by helping them recognize their abilities, resilience, and adaptability in a changing career environment.

Albert Bandura's social cognitive theory further supported the study. The concept of self-efficacy. It refers to a person's belief in their ability to perform tasks and achieve desired outcomes. In career development, students with strong self-efficacy are more likely to face challenges than students who lack self-efficacy and confidence in making the best choice for themselves and know what is most suitable for them in this challenging world of Artificial Intelligence (AI). Social cognition is also boosted by the environment where the learner learns about socio-cultural norms, adaptability in a changing environment, interaction with others, and stability.

4. Data Analysis

The process of data collection involved semi-structured interviews, which were analyzed using a qualitative thematic analysis approach. This method was adopted to aim at understanding student's perceptions, experiences, and expectations regarding uncertain future careers in the Artificial Intelligence (AI) era. It allows the researcher to identify repeated patterns, meanings, and themes emerging from the results participants give in their responses. The sample consisted of 30 university students selected through sampling (purposive sampling) from different academic disciplines and perspectives. The interviews were conducted individually in order to obtain in-depth information about learner's awareness, knowledge of artificial intelligence (AI), future career-related anxieties, adaptability, and preparedness for future

employment, and perceptions related to the role of educational guidance.

The data analysis process was carried out in several ways. *Firstly*, all interview responses were carefully written and organized. The researcher reviewed the transcripts to gain familiarity with the data and to understand the overall perspectives shared by the university participants repeatedly. During this stage, important assertions and recurring ideas related to career uncertainty, technological change, skill development, and counselling support were a major focus for the researcher and for the participants of the university. *Secondly,* open coding was applied to the data gained by interviews. Similar responses and concepts were grouped accordingly. Codes such as career uncertainty, career anxiety, fear of job replacement, lack of awareness and confidence about Artificial Intelligence (AI) skills, need for career development counselling, skill of adaptability, and future career planning often emerged from participants' responses.

The major themes identified from the data included:

4.1. Student's Perceptions of Career Uncertainty in the AI Era

Participants stated concerns about frequent technological advancements, automation, and changing job market demands and job replacements. Many students believed that traditional career paths are becoming obsolete and unnecessary due to Artificial Intelligence (AI). Participants from the data sample stated that they find it hard to step into the emerging world of artificial intelligence because of uncertainty and career-related future employment. Most of the participants observe that they certainly face challenges regarding technological advancement and artificial intelligence (AI) in the near future, so they demand educational and psychological counselling to monitor their choices, creativity, decision-making, and uncertainty for future careers and employment challenges in the Artificial Intelligence (AI) era in the modern world.

4.2. Need for Career Awareness and Guidance

Students highlighted the importance of educational guidance services in helping them understand career uncertainty, emerging careers, technological trends, and future employment opportunities. Participants also noticed that early age counselling services provided by the institutions help students to focus on their skills over time to mastery it and be able to step into the Artificial Intelligence (AI) era. Participants open up about the need for counselling at an early age to focus on the particular skill they are good at, and take counselling services to get awareness and understanding of adaptability, self-awareness, confidence, employment uncertainty, and to adopt a future career of interest. During the interview, one participant stated that due to a lack of self-confidence and uncertainty about his interests, he was not able to get a job. Institutions in Pakistan and universities can get a hold of counselling services for students to make informed decisions and pursue a career of their choice in the challenging world of technology and Artificial Intelligence (AI).

4.3. Importance of Skill Development and Adaptability

Participants stated the significance of digital literacy, communication skills, adaptability, critical thinking, and creativity as necessary factors for future careers. Participants with these skills were able to provide the data more diligently and accurately. Developing skills according to the student's area of interest and basic skills helps the counsellor choose appropriate counselling and educational guidance regarding uncertainty for future career, job employment, and opportunities in the modern Artificial Intelligence (AI). During the interview, many participants, especially boys with gaming skills, were more likely to give expected answers as they are interested in the digital world and technology. The role of a counsellor plays a crucial role in the development of skills and adaptability for changing technological advancements and employment for students. It is, in fact, noticed that without necessary skill

development and adaptability in students. He/she can never be a part of the Artificial Intelligence (AI) world.

4.4. Role of educational institutions and counsellors

Participants believed that universities and educational counsellors should provide career counselling programs, awareness sessions, mentorship, and workshops related to Artificial Intelligence (AI) career changes. Educational institutions play a crucial role in developing student's career building, confidence, and counselling services. In the early 20th century, there were not many educational institutions that provided services for counselling, but as the world of technology and Artificial Intelligence (AI) grows, the need for counselling services grows. Participants strongly agreed that educational institutions have a responsibility to prepare students for future workplace challenges. Students suggested that universities should incorporate career guidance programs. Artificial Intelligence (AI) awareness classes, and employability training in the educational systems, and mandatory counselling services. The findings also indicated that guidance services were viewed as essential in supporting student's career development in uncertain and technology-driven environments.

4.5. Psychological concerns and career anxiety

Participants reported feelings of anxiety, uncertainty, stress, and confusion regarding career stability and adaptability in the future, and the need for emotional and psychological support through services provided by counsellors. Participants mentioned their past experiences where they had already tried to avail opportunities for technological and digital jobs in the market, but they faced a challenging environment where they found opponents with high confidence and digital literacy skills, and work-from-home jobs. They feel anxiety, pressure, and disheartened. Lack of opportunities in many institutions where the skilled students are unable to get proper counselling sessions and guidance. Many students with self-awareness, confidence, and digital literacy skills are far more adaptable, stable, and have opportunities for future careers.

Analysis was explained through the light of career development theory, specifically targeting how educational guidance helps in career exploration, adaptability, self-awareness, and decision-making in a rapidly changing environment. The theory explained how students develop career adaptability, career identities, and prepare for future occupational challenges in the frame of Artificial Intelligence (AI) and technological transformation in the modern era. To ensure the credibility and trustworthiness of the responses, consistency of the interview process was maintained, participant's responses were carefully reviewed, and themes were related to the data across all interviews. Results indicate that educational counselling plays a crucial role in developing student's basic necessary skills for preparing them to step into the world of Artificial Intelligence and technology.

5. Findings and discussion

This study explored the role of educational counselling in preparing university students for uncertain career futures in the era of artificial intelligence. Based on semi-structured interviews with 30 student participants, several key factors and findings emerged regarding student's perceptions of career uncertainty, the importance of counselling services, adaptability, and future career preparedness. The findings are discussed in relation to existing literature and the theoretical framework of career development theory.

One of the major findings of the study revealed that university students perceive future careers as uncertain due to rapid technological advancements and the increasing integration of Artificial Intelligence (AI) and digital literacy into the workplace. Participants expressed concerns that automation and AI may replace traditional job requirements. Many students reported confusion related to which professions would remain stable and relevant according to their interests and skills in the near future. This study coordinates with reports emphasizing that

technological transformation is reshaping labor markets and increasing uncertainty in career planning related to the modern world of Artificial Intelligence (AI). Student's concerns regarding employment and job displacement indicate a growing need for structured career guidance with educational institutions. The finding implies that students require updated information about emerging occupations and changing workforce demands to make informed career decisions.

The findings highlighted that educational counselling is seen by students as an essential support system for career preparation. Participants believed that counselling services can help them understand their themes, interests, strengths, career goals, and future opportunities in an Artificial intelligence (AI) world. Students stressed that an educational counsellor can provide guidance regarding career pathways, future employment trends, academic decision-making, and skill development. Participants also highlighted the need for counselling service sessions specifically focused on technological change, digital literacy, digital careers, and future workplace requirements. This finding supports the assumptions of career development theory, which underlined self-awareness, career exploration, and informed decision-making. Educational counselling appears to facilitate student;s ability to adapt career plans according to changing labor market conditions and technological advancements in the AI modern world.

Another important finding revealed that many students experience anxiety and insecurity regarding future employment opportunities. Participants reported fear of unemployment, uncertainty about skill relevance, and pressure to compete in technologically advanced job markets and employment. The results indicate that career uncertainty not only affects student's academic planning but also influences their emotional and psychological well- being. Educational counselling was seen as an important source of emotional support, helping students build confidence, reduce uncertainty, and improve decision-making regarding future careers. This finding is consistent with the literature, which features the importance of counselling in promoting career confidence and psychological resilience among students facing uncertain educational and occupational employment and traditions.

The study found that students strongly believe adaptability and lifelong learning are essential for success in uncertain career environments. Participants frequently identified digital literacy, communication skills, problem-solving, creativity, critical thinking, and technological competence as important future skills for the Artificial Intelligence (AI) era. Students suggested that universities should integrate practical learning experiences, technological training, and employment programs into the academic curriculum. Participants also stressed the importance of preparing students for jobs that may not currently exist but are likely to emerge due to Artificial Intelligence (AI) and technological advancements. These findings support current perspectives on future workforce preparedness, which focuses on continuous learning and skill flexibility in rapidly changing economies.

The findings revealed that many students perceive existing career guidance services as limited or insufficient in addressing modern career challenges. Participants recommended that universities establish stronger counselling systems, including career mentorship programs, weekly counselling services in institutions, one-day workshops on AAI-related careers, employment training, and personalized counselling services. Students believed that educational institutions should proactively prepare learners for an uncertain future rather than focusing solely on traditional academic achievement. This suggests that counselling services should become an integrated component of higher education institutions.

The findings of the study strongly support the principle of career development theory, particularly the importance of self-awareness, career adaptability, exploration, and lifelong development. The theory suggests that career development is a continuous process influenced by environmental society changes. In the context

of artificial Intelligence (AI), educational counselling becomes increasingly important in helping students navigate uncertainty and adjust career goals according to labor market transformation and technology. The study demonstrates that educational counselling contributes significantly to student's preparedness by enhancing career awareness, reducing anxiety, promoting adaptability, and encouraging informed career planning. Therefore, universities should strengthen counselling services to help students effectively respond to emerging professional challenges in the Artificial Intelligence (AI) era.

6. Conclusion

The study explored the role of educational counselling in preparing university students for uncertain career futures in the era of Artificial Intelligence (AI). The findings revealed that students are increasingly aware of the rapid changes taking place in the labor market due to technological advancements and AI-driven transformations. However, many students also expressed uncertainty, anxiety, fear, and confusion related to future career opportunities, employability, and the relevance of their current educational pathways. The study demonstrated that educational counselling plays a vital role in helping students navigate these uncertainties by providing them with career awareness, emotional support, skill development guidance, and informed decision-making opportunities. Through counselling services, students can better understand emerging career trends, identify their strengths and interests, and develop the adaptability necessary for changing workplace environments. The findings further revealed that students view educational counselors and universities as important sources of support in preparing them for future professional challenges.

Furthermore, the study emphasized that success in the AI era requires more than academic knowledge alone. Skills such as digital literacy, critical thinking, communication, creativity, problem-solving, and lifelong learning emerge as essential competencies for future career success. Educational counselling was found to be instrumental in helping students recognize the importance of these skills and encouraging career adaptability.

In conclusion, educational counselling is not only important but essential in equipping students with the knowledge, confidence, adaptability, and career planning skills required to succeed in uncertain and rapidly evolving career environments. As Artificial Intelligence (AI) continues to reshape the world of work, educational institutions must prioritize comprehensive counselling services to ensure students are adequately prepared for future career realities.

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