ARTIFICIAL INTELLIGENCE AS A TOOL TO REDUCE GRADUATES' UNEMPLOYMENT NEEDS

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ABSTRACT
Globally the development of artificial intelligence (AI) skills is emphasised to encourage employment creation for the future. Future generations need digital, creative thinking, problem-solving and entrepreneurial skills for 21st-century careers. High numbers of graduates complete their studies without these skills and often struggle to find employment, which could contribute to low self-esteem andself-actualisation in pursuit of a career. Therefore, a qualitative study was conducted to investigate whether AI could contribute to the reduction of graduates' unemployment. An online open-ended questionnaire was emailed to 51 unemployed graduates who had graduated from different faculties of the University of Technology in South Africa. The findings detected that unemployed graduates were aware of what AI is, but 30% were not aware that they were using it in their daily lives. The need for practical application of curricula and AI activities should be integrated into higher education courses to develop creative, critical thinking, problem-solving and entrepreneurial skills. Effective training of both educators and students in AI is required. It was also found that the self-esteem and self-actualisation needs of graduates might be impacted negatively by unemployment and that AI might be used to retrain and develop graduates' skills to address the skills needs of unemployed graduates. Curricula and teaching should be linked to AI activities so that students can stay abreast with the global needs and those of their local community and employ entrepreneurial, critical thinking and problem-solving skills in their study fields.
Keywords: *Artificial Intelligence, Unemployed Graduates, Maslow's Hierarchy of Needs, Critical Thinking, Problem-Solving, Entrepreneurial Skills, Creative Skills.*

1. Introduction

Globally, the labour market is oversaturated with graduates who have acquired non-practical and non-technology connected skills, leading to a high unemployment rate and contributing to socioeconomic challenges in a country (Scarlato and d'Agostino 2019). In Africa, the labour force cannot provide for the demands of employment, even for graduated individuals (Mujčinović et al., 2021). Mutascu (2021) advocates the application of AI in various environments which could assist graduated students in finding employment or even becoming entrepreneurs to create their own work opportunities. AI is inspiring technological interest in social disciplines because of its impact on the labour market (Mutascu, 2021).

In addition, it is proposed that AI content such as machine learning, computer vision and autonomous systems should be included in the curricula of all school subjects and higher education courses (Kim et al., 2021). Tshishonga (2022) elaborates that graduates lack technology skills and that their qualifications are oversaturated and not in demand in the labour market, which often causes an increase in unemployment amongst the youth. Shmatko and Volkova (2020) also emphasise that policymakers globally are challenged with upgrading teaching and learning strategies and methods in education that will increase the development of most needed 21st-century skills of individuals of all ages. According to Jalinus (2021), blended learning skills needed in the 21st century must include

components of communication, collaboration, cooperation, and creativity.

Therefore, this study aimed to investigate AI, which includes robotics and coding, as relevant skills that could assist in the reduction of graduates' unemployment rate and contribute to a technology- based information society that stays abreast with technology development. The AI concept was initiated as early as 1950, with the main objective of imitating the intellectual capabilities of humans by using machines (Danziger, 2022). George et al. (2022) define AI as machines that have similar intelligence to that of humans or a machine that, when coded electronically, can perform actions that require some kind of intelligence. In addition, Chen et al. (2020, p. 75264) define AI as technology innovations and developments that have culminated in computers, machines, and other artefacts imitating human-like intelligence which could include cognitive, learning, adaptability, and decision-making capabilities.

One of the megatrends globally is the development of AI and the demand for developing industrial and service robots and coding skills. Based on this assertion, it can therefore be argued that there is an increasing demand for these skills (Deloitte, 2020). Robotics refers to automated coded components such as sensors, processors and automation software that executes specific functions (Gerson et al., 2022). This implies that individuals need these skills and sufficient training in how to code these robots and operate them.

All sectors of education are considered important drivers of developing students' robotics and coding field and are considered critical agents to provide innovative solutions, new knowledge and methods that could make the robotics field more accessible and known to the public at large (Schaeffer et al., 2020). It is evident that the evolution of the digital economy is completely changing the labour market of the 21st century. Klašnja-Milićević and Ivanović (2021) argue that not all higher education courses enable students to develop AI skills and link content knowledge to AI skills and everyday life experiences and needs. The argument is raised by Xia et al. (2022) that if students are exposed in their subject fields to AI and how AI can be applied in their expertise fields they could become creative and develops initiatives that could provide for the needs of the community. Thus, the development of AI skills and linking them to everyday life experiences could contribute to more creative, problem-solving able students that are required for the labour market (Chalmers et al., 2021; Ndu et al., 2022). Given the high demand for technology skills, acquiring AI skills could enable graduates to find employment. Hence, this study sought to investigate the following research question:

> *"How could artificial intelligence (AI) contribute to the reduction of graduates' unemployment rate?"*

2. Background

In South Africa, President Cyril Ramaphosa has declared that youth unemployment is a national crisis and this is worsened by the non-funding of youth programmes and slow economic growth (James, 2019). According to a report from Statistics South Africa, 2,8% of unemployed individuals were graduates, while 6,7% had other tertiary qualifications as their highest level of education. As a response to the high unemployment rate and untransformed curriculum, the FeesMustFall campaign of 2015 emphasised that the Universities in South Africa were not equipping graduates with the requisite and relevant skills to match the demands of the labour force and a technology and information-based society.

The term unemployment of graduates refers to a state where a person has the willingness to work and also has the required skills and all the necessary qualifications for a particular field but fails to find employment opportunities (Korniienko & Barchi, 2020). In response to the high unemployment rate, the Council on Higher Education (CHE) has provided opportunities for the leaders of higher education institutions to debate and identify solutions to transform South African Universities into institutions that could engage and respond to the unemployment of

youth or graduates (Chalmers et al., 2021). Aluede and Adubale (2020) assert that career guidance is an important technique that can assist in overcoming the challenges between the workforce and education as students get to understand the career paths that interest them and the demands of a 21st-century technology-orientated world. Van Broekhuizen (2016) states that the high unemployment rate, which also includes graduates, particularly in African countries such as South Africa, is a major challenge because of the increase in the poor-performing economy of the country and the lack of technology resources for teaching and learning (Oluwajodu et al., 2015).

In South Africa, based on the 2022 statistics, there was a decline in both the unemployed and not economically active numbers in the first quarter of the year. The graduate unemployment rate was 21,9%. Despite the lower rate of unemployment, the rates are still high and it is therefore important that this study investigated the application of advanced 21st-century required skills that could assist in the reduction of this high number of unemployed graduates. Falakahla (2018) emphasises that over the past decades, South Africa's unemployment rate has been exceedingly high when compared to other countries and a lack of technological skills and the high population rate of South Africa could be the cause of this high unemployment rate. During the time of this study, the unemployment rate among different nationalities in South Africa showed that the unemployment of black Africans was still higher at 38,6% (Graham et al., 2019). The reason could be that not all schools and institutions were effectively sourced and educators trained to be able to teach basic AI technology skills. Mncayi and Shuping (2021) argue that graduates' unemployment is caused by their field of study, because the skills in the field of study are regarded as being too general. The curricula offered at higher education institutions need to include the skills of AI so that graduates can be enabled to apply AI skills relevant to their careers.

Apart from a lack of exposure to AI and other technology applications and software, Voßemer et al. (2018) caution that one should not dismiss the psychological impact of unemployment on students. Unemployment of graduates may negatively affect their social position and mental stability. This could lead to misery, loss of identity, humiliation, fear, powerlessness and cheerlessness. In addition, Kinman and Grant (2021) argue that a strong support system could boost unemployed people's self-esteem and encourage them to find alternative and innovative ways to become employed. In contradiction, Álvaro et al. (2019) argue that self-esteem is not affected by unemployment as it is a personality trait that is constant and not dependent on any situation or surroundings (Álvaro et al., 2019). The world at large, which includes policymakers, the labour markets, and institutions of education and training, is challenged to deal with 21st-century skill provision for a new generation's needs.

Teaching and learning strategies must address technology applications such as AI that are appliedby society, consumers, production and in the labour markets (Mertzanis & Said, 2019). Advancements in AI have developed at a meteoric rate and are used in online shopping, healthcare, security systems, self- service stores and deliveries and many other services. Addressing unemployment and the rapid development of AI, the South African Presidency has established a Project Management Office (PMO) which must coordinate an integrated plan that will create two million jobs for the youth for the next decade. The PMO has been mandated to plan how to extend opportunities for the youth in further education and training, skills development, work experience, and entrepreneurship to create work opportunities in line with AI (Chalmers et al., 2021). The PMO has initiated the Presidential Youth Employment Initiative (PYEI). The key objective of the PYEI is to afford the youth the work experience to gain not only AI skills but also practical skills, teamwork, communication, leadership, self-confidence, resilience, collaboration, creativity, work ethic and time management.

Additionally, unemployment may be caused by different factors such as economic recession, the labour force that is not developing, unforeseen natural disasters and pandemics like COVID-19 or others which might pose a challenge to the return to the professional labour market (Korniienko & Barchi, 2020). Stevenson (2018) claims that the use of AI by creating robots may improve economic growth and improve productivity and increase the financial income of the country.

The Benefits and Challenges of Artificial Intelligence for Labour Markets

Florida (2019) is concerned that the introduction and implementation of AI technologies might replace human workers and increase unemployment in the next ten to twenty years. On the other hand, Aleryani (2019) and Bughin et al. (2018) point out that AI can positively influence economic progress and improve the level of production in most business divisions. Additionally, the invention and creation of services provided by AI could increase employment opportunities. Even though it is not easy to predict the impact that AI is imposing on the economy as a whole, Persons (2018) emphasises that AI can efficiently improve production, intensify human performance, and improve the service and quality of products in various industries. The different technologies of AI can capture huge data information gathered from different sources and even identify deviations faster than human beings. Moreover, AI can eliminate biased human decisions in many sectors when applied correctly (Persons, 2018), and can be used to ensure regulatory compliance in sectors such as finance, medical sciences, transportation, housework and therapy when they render services. It is further emphasised by Rauf et al. (2021) that effective education and business opportunities may be established by making use of AI.

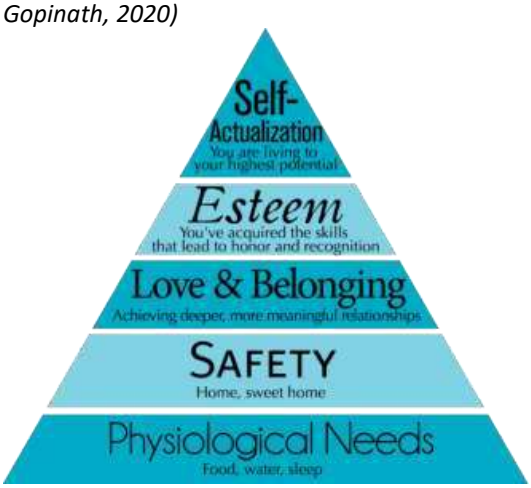
Even though AI is observed as a great initiative for future development in all labour markets, Turchin and Denkenberger (2020) indicate that challenges or even failures may occur when implementing AI in various sectors if not programmed or designed properly. When implementing an AI service in a field it must be tested and piloted effectively by the end users before fully adopting it (Siau & Wang, 2018). In cases where AI affects the employment of human workers, the replacement should be implemented gradually to avoid affecting employees' needs (Agrawal et al., 2017). It is therefore evident that AI impacts employment opportunities in all sectors, as some employees might be eliminated, and new careers created at the same time. Thus it is important to revise the development of relevant skills in the schooling of students that will enable them to create AI software for services and the work industry (Frey & Osborne, 2013; Makridakis, 2017; Smith & Anderson, 2014; Tanveer et al., 2020). Despite the need for AI skills in all education sectors, the needs of humans cannot be ignored. The issue of unemployment may cause further problems that may affect human needs as identified by Maslow in his hierarchy of needs (Álvaro et al., 2019). This study investigated AI as a tool that could assist in the reduction of graduates' unemployment needs. Maslow's hierarchy of needs, which is discussed in the following section, therefore underpinned this study.

3. Theoretical Framework

This theory of human motivation was constructed by the United States psychologist Abraham Harold Maslow in 1943. Maslow's theory is still applicable in this era as it stipulates the five very important levels of needs that should be met by every individual in a specific order (Abbas, 2020). The different levels are: physiological needs, located at the bottom of the hierarchy, which include basic needssuch as food, water and shelter. The second level reflects the safety need, such as a secure home. Loveand belonging needs are positioned on the third level of the hierarchy and these represent the affectionate relationship that one needs from friends, children or the community at large. The fourth level mentions the self-esteem need, which involves the acquisition of a skill or skills which contribute

to the satisfying feeling of confidence and competency. The last, fifth, level is self-actualisation, referring to one's eagerness to develop to one's fullest potential (Neto, 2015). Figure 1 below illustrates the different levels identified by Maslow's hierarchy of needs.

Figure 1: Maslow's hierarchy of needs (Sourced from Gopinath, 2020)



This study is in agreement with Maslow's theory, with specific emphasis on the human needs for self-esteem and self-actualisation. Álvaro et al. (2019) affirm that the self-esteem of graduates and those who are still studying may be affected negatively when they do not find employment, as it may stimulate fear in those individuals. Similar to human needs, the global employment market has specific needs, such as educating 21st-century students in AI skills to stay abreast with the rapid changes in technology applications in everyday life (Bughin et al., 2018), especially in the work industry (Bessen, 2018). Pankewitz (2017) emphasises the impact of AI and robotic skills in creating more employment opportunities and that AI skills will soon play a dependable part in all humans' lives on earth. It was therefore the objective of this study to investigate how AI skills could address the skills gap of unemployed graduates.

4. Methodology

This study applied a qualitative research design. Fifty-one participants who were sampled for this study were graduates who had not been placed in any of the University of Technology's departments for the Presidential Youth Employment initiative which is responsible for the coordination of the created new job opportunities from the Presidency of South Africa in 2022.

An online questionnaire was created using SurveyMonkey to collect and analyse data. As researchers in this study, we adopted important ethical guidelines as set out by Bless et al. (2013, pp. 31- 33) as well as by the University of Technology. The researchers subscribed to ethical principles, namely autonomy, justice, fidelity, openness and respect for participants' rights and dignity and adhered to the POPI Act. Once ethical clearance was received from the institution's various ethical committees to conduct the research, a consent form to participate in the study was completed and signed by all participants. None of the participants' contact details were made available or visible to any person during or after the study. The participants were informed about what the research was all about, and that they could withdraw at any stage as they were participating voluntarily.

The consent letter and the online SurveyMonkey questionnaire link were sent to the graduates via email. The questionnaire comprised open-ended questions that allowed the unemployed graduates to provide information about their qualifications, unemployment, and AI knowledge. The responses were analysed using content analysis where similarities and differences of responses were discussed.

Findings

Results from the online questionnaire are reported and discussed below.

Participants' biographical data indicated that they had acquired different qualification levels of the National Qualification Framework (NQF). The participants had graduated from the different faculties of the University of Technology and had qualifications ranging from a Diploma (36%), Degree (54%) to Postgraduate Diploma (10%). The qualifications ranged from the fields of Policing (5%), Project Management (25%), Applied Languages (24%), Public Finance (20%), Internal Auditing (4%), IT Software Development (2%), and Journalism (23%) to Education (1%). The participants had been unemployed for a period

ranging from one month for those qualified in Education to seven years for those qualified in oversaturated courses. The reason for the low percentage in Education is most probably the shortage of teachers that South Africa is experiencing in rural areas. Those in the fields of management sciences and finances struggles the longest to find employment. The reason could be linked to the fact discussed by Tshishonga (2022) that their qualifications were not in demand in the labour market, which often causes an increase in unemployment.

Maslow's theory emphasises that when graduates cannot find employment, it might negatively affect their self-esteem need and self-actualisation need and hamper their eagerness to develop to their fullest potential in life. The responses of the participants were categorised under the theoretical levels of Maslow's hierarchy, namely self-esteem and self-actualisation. These themes encapsulate the needs and experiences of participants during unemployment as graduates.

Self-Esteem Level

Understanding the importance of artificial intelligence (AI).

Participants were asked whether they had furthered their studies after obtaining an undergraduate qualification. Responses to the question were as follows:

> *No, because I don't have any financial assistance. No, I did not, but I wanted to further my studies.*
> *Yes, I wanted to further my studies to pursue my academic goals and also be able to qualify if an opportunity requires higher-level skills, I can be able to apply and succeed.*
> *Yes, postgraduate is the best introduction to a career in academic*
> *Yes, because I don't want to stay at home and do nothing, rather I equip myself with school*
> *I tried to, but I dropped out because of a lack of finances.*
> *No, after struggling to find a good job after varsity I immediately lost hope in my academic studies and did not see the need to do a postgraduate programme.*
> *No, though I wanted but could not because I did not get the certificate and I was blocked on the instructions system for any registration.*
> *Yes, am studying it, I want to have a lot of knowledge.*

Based on their responses, 60% of the participants studied further because they wanted to increase their intellectual capacity and acquire better employment opportunities. Thirty percent of the participants did not have any financial assistance to further their studies. Only 10% of the participants lost hope when they were not able to find employment.

From the above responses, it is evident that the participants' quest for positive self-esteem can be thwarted by various factors, such as lack of finance to acquire additional skills and lack of motivation to study further. Then again, others showed the need for more encouragement and motivation to acquire additional skills.

To introduce unemployed graduates to AI, the participants were asked what they knew about AI, coding and robotics. Alarmingly, 30% of the participants did not know what AI/ robotics and coding entail. The other 70% showed a clear understanding of AI/robotics and coding. Even for the 30% who indicated that they did not know what AI entailed, the consent form that they signed explained this to all participants and what the research study was all about.

participants were also asked whether they were interested in being trained in robotics and coding and how they thought the attainment of these skills would assist them to find work in their field of specialisation. Even though 30% of the participants did not really know what AI entails, all of the participants wanted to acquire AI skills. The most common responses were grouped as follows:

> *Yes, because I'm willing to learn everything to get employment.*
> *Acquiring skills gives you a competitive advantage and is*

important for self-development. Technologyhas become a major part of our lives and has become a critical skill to have.

Yes, I strongly believe if I have experience in robotics, which is a new era, it will help me get a job, especially in my field of Journalism.

Yes, because it can help me to boost productivity, accuracy, and timesaving in internal auditing.

In policing we are already using robotics and AI, but I wish to enhance my knowledge to contribute to more developments in the policing section. My knowledge of AI will most probably improve my chance to acquire a position I opt for in the policing sector.

From the exposition above, the importance of AI can be linked to the participants' self-esteem and self-actualisation. In one of the responses, a participant directly linked competence in AI as a skill that could assist them in finding employment. Finding employment is one of the variables that can be identified as enablers in the enhancement of self-esteem and self-actualisation. Not only does AI lead to finding employment, it also assists in the acquisition of new skills which may lead to participants engaging in entrepreneurial projects, which points to job creation rather than the dependence on finding employment.

From Maslow's theoretical framework, it follows that the acquisition of a new skill may lead to respect and recognition, which are critical in ensuring that individuals achieve their self-actualisationneed.

Self-Actualisation Level

The Value of AI in Participants' Careers

Participants were asked how AI could be valuable for their career and how they could link it to their prior acquired skills. Responses were as follows:

I don't know.

It can help me manage projects better with less human error and better accuracy. It can also help me generate documentation and track progress better.

Artificial Intelligence can be valued in my career since it can elevate my skills to be more technical, which will be related to the current market.

Helps to eliminate human errors.

Let me give it a try first, then I will see if I'm interested in it.

It will prevent hard labour and will do my work less difficult and faster.

Its intelligence and my little knowledge in IT will help me do the work online and at the right paceand still get better results.

News or media organisation can use AI to automate a huge number of tasks that make up the chain of journalistic production, including detecting, extracting and verifying data, and producing stories and graphics.

It will broaden the little knowledge I have about technology, which will come in handy for both me and my pupils in the future during lessons.

Through the computer subject, which is called business information systems, AI skills are much needed. I have skills in computers and am sure it will not be too difficult to master and apply creative AI skills.

Even though some participants did not know the value of AI in their careers, most participants believed that AI might broaden their knowledge base, which might assist them in their self-actualisation need for progress and development.

Participants were further asked by the researchers whether AI and robotics and coding could ensure employment once they were trained in these skills in their study fields. Some participants thought of starting their own businesses and some thought of improving the skills they currently possessed. The responses of how AI could contribute to their finding employment are reflected below.

Yes, without a doubt. I have a great combination of qualifications. My

sector was badly affected by COVID-19, however under normal circumstances it would not be difficult to get employment ifI have sufficient AI and robotic skills that I can apply creatively in my work once employed.

If I develop AI skills and attach problem, critical thinking and creative thinking skills, I am positive that I will end up as a person with diverse skills and can make myself more marketable.

I can end my unemployment by being entrepreneurial and starting a business or being self- employed, especially with AI delivery services in my project management career.

I really don't know; I am not good with technology and don't know if I will master robotics and codingskills.

By getting some /internship in a company to gain some experience in AI and robotics because nowadays it's hard to get a job without experience in any field.

Maybe by volunteering more and sharpening my skills, learning new technology skills such as robotics.

Currently, I think establishing my own business is the only way out. I need to be innovative, maybe robotics can help me design a new concept that is marketable.

I will keep applying and trying to have my own business. I don't think robotics will be the answer for my situation.

Some of the participants responded that they believed that AI and robotics skills could contribute positively to their careers and assist them in finding employment. Some indicated that they wanted to develop problem solving and creative skills and at the same time develop a new AI delivery system that would attract employers to employ them. However, a few (4%) thought that they were not technology literate and not interested in developing AI skills.

5. Discussion

The demand for more related 21st-century skills impacts graduated students as confirmed by Statistics South Africa in the year 2022 that 21.9% of graduates are not employed in South Africa (Abdel- Al Ibrahim et al., 2022). The evolution of AI has contributed to a demand for developing industrial and service robots and coding skills and is changing the requirements needed in the labour market (Deloitte, 2020). Schaeffer et al. (2020) point out that educational institutions are the main implementers of AI skills in different careers and study fields. The development of AI skills and needs in all sectors of human beings' everyday living necessitated the study to investigate how AI could possibly assist unemployed graduated students to find work with additional training in AI skills. Most of the students (70%) indicated that they were well informed about what AI and robotic skills entail. Alarmingly, 30 % of the participants were unsure what AI involves despite them using online banking, safety and other services that are available to fulfil their needs. According to Lamb and Etopio (2020), the reason could be that some educators neglect to connect AI and real-life experiences with content knowledge that students learn in courses. To fulfil the needs of the community and to ensure that graduated students are employed the application of AI activities in everyday life experiences and to specific subject fields could contribute to the development of entrepreneurship, and creative and problem-solving skills that students require for active participation in the labour market (Chalmers et al., 2021). This could enable them to not only find employment but create their own employment opportunities according to ever-changing technology development and the community's needs.

However, Mncayi and Shuping (2021) emphasise that one should also consider that unemployment could be caused by students who graduate in a study field that is already oversaturated. In this study, it was detected that students who graduated in study fields such as applied languages, journalism, and project management struggled for long periods to find employment. Therefore, curricula and teaching

activities should be linked to AI activities so that students can stay abreast with global and their local community needs and employ entrepreneurial, critical thinking and problem-solving skills in their study fields.

Persons (2018) pointed out that the advantages of AI could improve service delivery, enhance product quality, and intensify human performance in various industries. However, despite the advantages of AI, there is a lack of exposure of students to AI and other technology applications and software instudy courses. Álvaro et al. (2019) cautioned that educators should not neglect the self-esteem and self- actualisation needs of humans deriving from Maslow's theory. Human needs cannot be isolated from AI skill development. The challenge of unemployment for graduates may affect their social interaction, communication and mental stability negatively.

In terms of Maslow's hierarchy, the self-actualisation category is best achieved when one lives to one's highest potential. Therefore, the value that is attached to AI has the potential to help participants fulfil their optimal potential. Failure to achieve this may also have negative consequences, as Voßemer et al. (2018) state that the lack of employment of graduates may negatively impact their social outlook on life and psychological perception, which may lead to anxiety and depression, lost identity, embarrassment, despondency and frustration.

This study found that the self-esteem and self-actualisation of graduates may be impacted negatively by being unemployed and AI may be used as a tool to retrain or upskill these unemployed graduates to reduce the unemployment rate.

It is recommended that educators should be well trained in how to create AI teaching and learning activities in their classes to develop students' entrepreneurial, critical thinking and problem-solving skills that could assist them to create their own inventions and employment opportunities. To further assistthese unemployed graduates, intervention actions such as training workshops could be arranged for graduates so that they could be trained in the basic skills of AI, robotics and coding. The acquisition of AIskills and knowledge could possibly stimulate and encourage unemployed graduates into becoming entrepreneurs in their study fields.

6. Conclusion

This study investigated whether unemployed graduates were knowledgeable about AI skills that could possibly assist them in being employed in other fields of the labour market. Online open-ended questions were answered by graduates from various study fields and 30% were not knowledgeable that they were using AI skills in their everyday life situations. This showed a need for more practical activitieswhere AI assignments could be applied in various study fields. Furthermore, a need for training in AI was detected, not only for educators but also for graduates. Training opportunities in AI could possibly not only assist graduates in acquiring competence in robotics and coding skills but also aid unemployed graduates to maintain positive self-esteem and self-actualisation. According to Maslow's hierarchy of needs, an individual's self-esteem is one of the important needs that graduates strive to fulfil.

It could therefore be concluded that the acquisition of AI skills could increase the chances of unemployed graduates becoming employed or becoming entrepreneurs. Finally, although the acquisition of AI could improve the skill levels of graduates in a particular country, it has to be carefully introduced, as it is not seen as a panacea for all unemployment problems that are experienced by those who are not employed.

Limitations of This Study

This research study had some limitations. Data was collected from one University of Technology where mostly disadvantaged socio-economic poor students graduated. The study included various study fields of students, which led to more generalisations of findings. It is therefore suggested that further research studies be conducted at Universities of Technology situated in diverse socio-economic areas and that various study fields should be targeted to obtain more accurate findings related to a specific study

field to establish how AI could enhance employment in that field.

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