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CHAPTER 4

The place of knowledge, graduate attributes and technology in the 21st-century higher education curriculum

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Abstract

The purpose of this chapter is to explore the complexities and challenges for higher education curriculum transformation in the 21st century. More specifically, the focus is on the ways in which such transformation could place equal value to disciplinary knowledge, graduate attributes, and technology. In other words, how to enable students to learn so that they can use acquired disciplinary knowledge, graduate attributes, and technology to enable them to adapt to changes brought about by 21st-century demands. By means of a literature review as a research methodological choice, the chapter explores the value of placing disciplinary knowledge, graduate attributes, and technology side by side in the centre of the curriculum.

Keywords: graduate attributes, higher education curriculum, emotional intelligence, technologically savvy graduates.

4.1 Introduction

The concept '*transformation*' in the curriculum discourse realm must be understood broadly for content selection and pedagogical delivery to be revised. Questions that need to be answered when thinking of curriculum transformation include, amongst other things, the purpose of curriculum, the kind of society that needs to be developed, socio-economic needs, curriculum relevancy, and its alignment to the current epoch. Bernstein (2000) differentiates curriculum into internal and external components to serve different functions provided by different knowledge types covered by disciplinary knowledge and skills. Equally, serious considerations of the environment in which the curriculum is enacted must be reflected. These include the drastic changes brought about by global trends, knowledge expansion, technological advancements, curriculum relevancy, changes in student demographics, and ever-changing workplace needs. At the same time, ways of accessing knowledge vary, making it obligatory for individuals to be exposed to a curriculum that provides prospective graduates with relevant knowledge and skills, compatible with the times they live in.

Besides, there has been a growing interest in the value of graduate attributes in education and business (Succi & Canovi, 2020). Thus, curriculum reforms, that create space for developing competency-based and interdisciplinary elements, are seen as novel, relevant, and encompassing to respond to socio-economic needs (Caspersen, Frølich & Muller, 2017). However, Eraut (2012) indicates that a gap exists between knowledge needed at the workplace and knowledge and skills produced through formal education contributing towards the development of character and attitude. On the other hand, the 21st century of technological advancement demands certain graduate attributes, dynamism from its workforce, and knowledge of the job. Hence skills required at the workplace are important to be considered

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for graduates' trajectory (Cimatti, 2016). However, within the current curriculum delivery, graduate attributes as another type of knowledge, are relegated to the periphery and are not regarded as important, and this has contributed to the socio-economic challenges in the country including unhealthy behavioural traits.

Furthermore, the socio-economic success of governments rely on citizens' capacity to compete and adapt to global trends and existing technological developments. Undoubtedly, alongside theoretical knowledge content, graduate attributes need to be integrated into the curriculum to set the stage for active learning, socialization amongst peers, the enhancement of self-efficacy, and technical know-how (Ballen *et al.*, 2017). In the same breath, most graduates want to be employed in formal esteemed professions that are productive. However, employers complain about the poor development of attributes, referred to as 21st-century skills.

Work Integrated Learning (WIL) and Experiential Learning can be used to enable students to gradually master different competencies by moving teaching, learning, and assessment beyond the university to work-based scenarios (Molomo, 2021; Cheng *et al.*, 2014). Such a trajectory can allow for the development of both cognitive and social aspects of learning to be integrated and positioned better at the centre of the curriculum to navigate different social contexts. The purpose is to enhance competencies and knowledge for the workplace, personal development, and other roles in society to be able to solve problems (Smith & Worsfold, 2015; Lyu & Liu, 2021). Moreover, Patel (2003) indicates that graduates need to develop cognitive and graduate attributes across disciplines. This suggests that the development and success of students rely on the type of curriculum content that exposes them to modern-day demands, hence a need to seek knowledge

pluralism which emphasises knowledge based on scientific truths and applications including technological know-how (Wald & Harland, 2019).

Competencies are classified by different names which all have a common meaning and in certain quarters they are referred to as soft skills, generic skills, or graduate attributes. In this chapter the term graduate attributes will be used. Questions to ponder must be on how to place value on graduate attributes which must be at the core of a transformed 21st-century curriculum. It is against this background that the purpose of this chapter is to discuss the relevancy of curriculum in addressing the needs of the 21st century by first discussing the needs of different role players who are expected to benefit from curriculum change. Secondly, the focus would be on the development of graduate attributes and why their value needs to be recognised in the curriculum. Thirdly, the chapter explores the social dimension of graduate attributes in shaping character and attitude including the pursuit of lifelong learning. Thus the transference of graduate attributes is to be treated as assets.

4.2 Literature Review

4.2.1. Curriculum for all

Bernstein (1975) argues that curriculum is regulated by a set of norms that follows a dynamic process whereby, at a certain period, a particular content can be transformed following the prevailing surrounding international and national perspectives. At the same time, curriculum is associated with different people where it operates, ranging from interest groups, institutions, society, and businesses who all have an interest in how curriculum addresses the needs of the society, and economic progress, including fostering relations among different stakeholders (Annala, Lindén & Mäkinen, 2016). Curriculum relevance is

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the prime factor for curriculum transformation which is influenced by students, lecturers, employers, businesses, and advisory board members as main stakeholders in tertiary education (Nagarajan & Edwards, 2014).

Consequently the needs of all parties involved need to be fulfilled. Undoubtedly, curriculum reform becomes a contested terrain that is surrounded by complex social and economic features accompanied by various needs and logic of different stakeholders (Shay, 2015). In fact, Brits (2018) raises concern about the mounting pressure from the government and the business sector on the value of competencies which brings a new perspective on how to improve curriculum to cover the development of certain personal and professional traits. Other than that, the prevailing demands of the world of work, societal challenges, and world trends show that human capital is significant and the provision of soft skills without compromising hard skills needs to be considered in transforming curriculum (Anthony, 2014). Hence changes in the curriculum are necessary to convey knowledge and skills that are relevant to address varying needs, including the development of the kind of graduates who are able to cope with 21st-century demands (Tahirsylaj & Sundberg, 2020).

The increasing needs brought about by global trends and socio-economic demands require changes in curriculum content to be effected by placing value on the development of competencies that complement knowledge (Villar-Onrubia & Rajpal, 2016). The view is also supported by Qizi (2020) who maintains that Higher Education not only has the responsibility of providing students with hard skills to prepare them to become professionals, but should also develop graduate attributes that enable them to play a role in civic matters contributing towards positive development of a society. In other words, curriculum is considered relevant, meaningful, and effective when it contributes to

students' holistic development and success (Ibid). It is for this reason that approaches and changes in the curriculum need to align with the present needs including choosing theories that place learners at the centre of the curriculum (Ibid).

Faced with the reality that not all graduates find employment after completing their studies, long-term benefits of graduate attributes find significance when they vary, interconnect, display complexity, professionalism, political, contextual, and cultural relevance, and invest in human capital for a lifelong span (Hora M; Benbow R & Oleson A, 2016). This brings the notion that other different approaches to looking at graduate attributes that embrace contextual cultural differences must also be considered in the soft skills competencies agenda, to bring all on board instead of only using a single international blanket umbrella approach that matches mainly the needs and cultural context of countries where the idea of soft skills originated (Ibid). "Curriculum for all" focuses on giving students new skill sets for both the labour market and leadership development as human capital skills that will stay with graduates for a lifetime (Abenathy, 2018).

Transforming curriculum to fit into international standards policymakers in localised settings are cautioned not to devalue cultural relevancy including people's voices in a democratic dispensation (de Wit, Gacel-Avila, Jones & Jooste, 2017). Besides, a balanced curriculum that caters to varying contextual and global needs of different stakeholders makes sense when it liberates people by equipping them with knowledge and skills that are not only needed in the marketplace but also by those that contribute towards building sound personalities and acceptable traits that contribute to the success of the nation (Freire, 1992, cited in Gibson, 1999). Following Paul Freire 's notion of a liberated nation, changes in the curriculum are necessary to serve and save society from

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social, economic, and political deprivation by equipping the nation with self-sustaining relevant coping skills and knowledge.

Arguably, universal scientific principles matter in curriculum discourse. However, the cultural capital paradigm coined by Pierre Bourdieu (1986) brings in the notion of considering contextual and cultural dynamics in the development of competencies by dispelling the myth of dichotomising graduate attributes as non-cognitive skills, labelled as simple skills and hard skills classified as complex cognitive skills (Hora *et al.*, 2016). Such a view places focus on how graduate attributes are taught, that they too require the same serious approach given to hard skills and the use of certain expertise to develop them as lifetime traits to enhance different competencies that enhance knowledge and expertise of the job (Ibid). An example given by (Ibid) about the value of communication as a skill in a professional nursing context is the way information is conveyed to patients which reveal elements of social and cultural norms that accompany the professional knowledge as not an overnight activity, but a process that follows planned activities to be imparted and efficiently learned.

Research also reveals that curriculum provision in higher education is not only meant to prepare students for job employment but to provide them with knowledge, technical expertise, and skills that can enable them to participate and make informed decisions in a pluralistic democracy to realize human rights principles such as respect for dignity, civic engagement responsibilities, ethical behaviour, and sustainability issues (Hora, Benhow & Oleson, 2016). Graduate attributes are thus perceived as predicting individuals' success in various spheres of life (Cinque, 2016). On the other hand, society expects graduates to be proactive, critical, and engaged citizens who can perform leadership roles, and exemplify sound behaviour, including the ability to analyse and solve problems (Bitzer & Withering, 2020).

Curriculum transformation is necessary to equip students with knowledge, skills, and technology to tackle the demands and expectations of the 21st century (Pachauri & Yadav, 2014). This means that apart from cognitive abilities that are to be developed, individuals are expected to display personal qualities that emerge from the integration of generic skills, knowledge, and technology. Contrastingly, Truong, Laura & Shaw (2015) argue that the development of graduate attributes in the curriculum is still devalued in the academic discourse. As a result, graduate attributes are not efficiently developed to allow individuals to enhance their level of performance by using social skills that are outside the radius of the profession to reach a high level of efficiency (Grisi, 2014). In the Australian context, graduate attributes referred to as soft skills are highly valued and are perceived to attract job opportunities which are estimated to cover two-thirds of different jobs by 2030 (DeakinCo, 2017).

Similarly, foundational principles underlying disciplines are not the only capabilities that are needed in the world of work, there is a great need for competencies that serve the purpose of enhancing the efficiency of hard skills. Thus Geissler, Edison & Wayland (2012) posit that employees in their professional space can be able to communicate and work effectively in cross-functional teams through the development of non-professional skills. The implication thereof is that generic skills and technological competencies must not be undervalued in the curriculum. Despite the focus on elevating graduate attributes to be located side by side with disciplinary knowledge (Nell & Bosman, 2017) brings to light the notion that Higher Education Institutional policies are implemented without carefully looking at the contextual dynamics of positioning graduate attributes (Ibid), this highlights their importance and the need to strengthen staff development to ensure that staff integrate content and graduate attributes effectively.

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The 21st-century knowledge expansion further requires an integrated curriculum model that transcends all disciplines by focusing on the knowledge students must possess, how it impacts character development focusing on what kind of citizens they will become, what they will do, or how the acquired knowledge and skills will be demonstrated (Drake & Reid, 2018). Furthermore, the idea of an integrated curriculum changes the classification of some of the competencies that were regarded as non-cognitive skills to complex skills. Some of the competencies or graduate attributes such as communication, collaboration, critical thinking, information management, and creativity showing what a graduate can do are currently considered complex skills and recall falling under the knowledge type has shifted to a low-order skill (Ibid).

4.2.2. Graduate attributes and technology

The 21st century, as characterised by changes in technology and practical skills therefore requires a transformation from a traditional approach to a curriculum that does not only place more value on disciplinary knowledge and less on skills such as critical thinking, problem-solving, teamwork, and others, that are most relevant in the 21st-century world (Sarumaha, Jaya, Nofirman, Padilah & Khobir, 2023). It is to be noted that the growing global demands require curriculum to oscillate towards the currently needed skills in alignment with human-centred philosophical approaches including the transference of socio-cognitive skills (Ibid). Since much attention has been given to hard skills and less to graduate attributes, Clarke (2017) and Ciappei and Cinque (2014) a transformed curriculum has some implications for balancing the scale by placing value both on content knowledge and skills.

Remarkably, the advent of global trends and digital technology raised the prominence of graduate attributes as favourable cross-cutting skills that are valued more by companies during the recruitment and hiring

process (Ibourk & El Aynaoui, 2023). The implication is that companies contribute towards the economic success of the country; therefore graduate attributes are significant in driving the economy. As a result, they need to be recognised in the curriculum. Dell' Aquila *et al.* (2016) indicate that graduate attributes are adaptable skills that are in demand in the labour market. This means that institutions or companies' ability to produce or perform is influenced by knowledge and intrapersonal skills employees possess and use for socio-economic success.

The evolution of technology plays a huge role in today's life, and as such technological skills need to be integrated into the curriculum to prepare students for the world they live in. As posited by Guo, Xie, Jiang, Huang, Chen and Xue (2019) the internet has currently infiltrated the socio-economic livelihoods of societies and has an impact on traditional ways of doing things that are now replaced by technology and digital tools such as virtual conferences, online meetings, emails, including pedagogical delivery that are also done online. Following Costley (2014) technology brings many benefits in its daily usage to many students as it opens for them opportunities to explore different avenues, communicate easily and faster with others as well as enabling communication, and motivation which creates confidence amongst individuals. To students, it seems to bring greater satisfaction by making learning relevant and meaningful enabling students to engage with what they see and find in the environment (Daniela, Strods & Kalinina, 2019).

The founder and Executive Chairman Klaus Schwab, in the book cited in Schwab & Davis (2018) gives a practical companion and field guide about the Fourth Industrial Revolution in influencing how we do things, how it affects the functionality of economies and governments including its impact on humanity. Other than that, the competitive edge in the economic domain requires a curriculum that incorporates digital

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technology skills to enhance students' adaptability in the employment world and life in general (Castro-Guzman, 2021). It is within these realities that transformation in the curriculum is necessary to embrace different angles that can lead toward the progress and development of a society.

Similarly, the research done by (Henrikson, Mishra & Fisser, 2016) shows a synergy between information, communication technology, and creativity as one of the personality traits. Technology contributes towards increasing efficiency and the high level of quality at the workplace and cannot function solely without human input, hence graduates who possess the best technological skills are in demand (Barbara, 2016). The assertion made by (Drake & Reid, 2018) is that memorisation of facts in isolation is no longer a productive way of gathering knowledge, it needs the complement of skills. Hence, communication skills as part of graduate attributes when linked to technology in the curriculum afford students and the broader public the opportunity to connect in a wider variety of contexts (Ibid). Furthermore, knowledge and technological expansion has shifted to lifelong learning to make sense of the huge information learners are exposed to.

Additionally, the practical application of skills and technological applications in the process of learning is preferred by many students to boost their confidence in using their inherent traits and collaborating with others to find solutions to problems in their socioeconomic, and political environment (Ballen, Wieman, Salehi, Searle & Zamudio, 2017). Most researchers revealed the importance of change and innovation to match current socio-economic needs, and the enhancement of performance to register progress (Serdyukov, 2017). Therefore, the use of technology is another component of the curriculum that needs to be integrated to link to other best practices that can contribute towards

change and the advancement of society. This means that curriculum has a plural factor as it relates to different stakeholders and impacts all who live in the rapidly changing technological and knowledge expansion.

4.2.3. Graduate attributes and their value

According to Bester (2014) and Khan (2018) the discourse on soft skills which can be referred to as generic skills, graduate attributes, unified skills, 21st-century skills, capabilities, indispensable skills, or key competencies is in higher demand in the work marketplace. Even though they are used interchangeably, the term graduate attributes has been chosen, and they are needed in workplaces and social settings. The discourse on soft skills or graduate attributes started in countries such as Australia, the United Kingdom, Europe, and the United States of America. In Australia, for example, the view is that graduate attributes must be developed as solutions for employment opportunities (Bester, 2014).

Graduate attributes are also referred to as employability skills and are associated with employment success and life wisdom (Patacsil & Tableting, 2017). This means that soft skills can enable students to learn wisdom, values, and principles that sustain diverse societies and contribute to their reputations. Graduate attributes are also intrapersonal skills that play a significant role in the achievement of strategic goals of the company by employees, the expectation is that employees must be able to communicate effectively with colleagues and clients and be able to take part in activities that need teamwork (Khalid & Ahmad, 2021). Teamwork as another feature of graduate attributes is also regarded as an important facet in the learning process as it opens an opportunity for students to fulfil one of the roles of education namely, to socialise and form relationships with others (Biesta, 2013).

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As posited by Robes (2012) graduate attributes also fit into the classification of character traits and are displayed through attitude and behaviour which cannot be regulated through technical prowess or knowledge mastery, such that individuals in leading positions who do not use technical or disciplinary knowledge to manage, negotiate or mediate, they instead apply personal competencies to solve problems. On the other hand, Emotional Intelligence as another related skill with a sociological lineage which at the same time is linked to performance, encompasses several personality traits namely, social graces, personal habits, and optimism to compliment hard skills (Cinque, 2015; Kingsley, 2015). According to Yepes Zuluaga (2024) Emotional Intelligence and other related skills are also valued by society and the workplace as they enable individuals to express their emotions, understand them, and control them whilst strategically using them in maintaining composure during stress either in the workplace or social situations to manage one's emotions (Kingsley, 2015). As a result, both hard skills and soft skills synonymously referred to as graduate attributes play a major role in developing hardy personalities that can flexibly help individuals to navigate through challenges brought by the workplace and personal ones; hence they are mostly valued by employers (Ibid).

Noticeably, graduate attributes are perceived as new skills that support effective communication, innovation, creativity, flexibility, decision-making, and collaboration including problem-solving (Patacsil & Tablatin, 2017). They can serve as enablers for people to become creative and to think out of the box by stimulating thoughts that can lead people to also create jobs for themselves. Hence some graduates are also exploring entrepreneurship by identifying gaps and opportunities in their socio-economic environments. According to Gibb (2014) graduate attributes are linked to capabilities people are born with that are further developed to navigate complexities. In the same breath, Ibourk & El Aynaoui (2023) note that graduate attributes are

most favoured in the labour market and therefore are important for the general holistic development of students.

Graduate attributes are further referred to as cultural capital confirming the idea that they are not simple, add-on skills or competencies – they are on the contrary tied to social and cultural norms with varied nuances that are displayed differently by other cultural groups (Hora, Benbow & Oleson, 2016). For example, assertiveness and confidence may be displayed by looking others straight in the eye but in some other cultures, it may be interpreted differently. Mindful of the inherent process of instilling graduate attributes, it requires professional expertise to prepare graduates to be able to apply such skills in real-life situations (Ibid). The perspective brought by Hora *et al.* (2018) is the idea that such skills observe professional norms of certain professions and are learned gradually through exposure and learning opportunities that are created. To Bourdieu (1986:248) skills or attributes development is a process that takes some time to be learned which can be compared to building a muscular physique. This idea therefore corroborates the idea that graduate attributes are to be valued and given the appropriate attention given to disciplinary knowledge.

The classification and differentiation made by Hora *et al.* (2016) between the Cultural Capital Paradigm and the Soft Skills Paradigm vary slightly in their perspectives and the weight placed on competencies. With the Soft Skill Paradigm, a dichotomy is maintained that clusters hard skills as cognitive complex skills while soft skills are seen as non-cognitive skills and this reduces complex skills such as critical thinking and communication skills to a non-cognitive level, even though they are considered workplace-needed skills while the memorisation of concepts packaged in hard skills is at low hierarchy level compared to critical-thinking appearing in the non-cognitive cluster (Ibid). On the other hand, the Cultural Capital Paradigm according to (Ibid) does not blame

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institutions of learning or students for the lack of employability requirements – rather, it looks at structural, cultural, and socioeconomic challenges that deny students opportunities of possessing the required capabilities seen as a priority in leveraging employment.

Included in the benefit of graduate attributes is the notion of the human capital leadership development as part of the competency or graduate attributes transformational discourse of new skill sets (Robes, 2012). Leadership is viewed as a process-oriented competency sought after in the workplace career ladder and socio-political and civic engagements (McGunagle & Zizka, 2020). Interaction with a diversified host of people is another positive personality trait that is valued as a leadership quality by society, to those who are leading teams, by maintaining a team spirit and at the same time exposing a leader to make correct and ethical decisions (Brungardt, 2011). The cultivation of competencies such as leadership skills, communication, teamwork, and self-discipline including the ability to influence others also correlates with high performance, which raises the expectation for Higher Education to plan curriculum activities in a way that they give students ample and gradual opportunities to reach their maximum level of development (Karagianni & Jude Montgomery, 2018).

4.2.4. Knowledge of the curriculum and social benefits

All education institutions have a contribution to make towards shaping a desired society and this has a bearing on a variety of influences in the environment that warrants attention for knowledge that empowers society (Davies, 2016). Hence the need for intellectual power to engage and shape the moral fibre of the greater society and to remedy the moral decline gives eminence to competencies as having more value beyond mere skills including technological knowhow, which is also at the heart of a curriculum that is socially inclined (Wheelahan, 2010). This means that the curriculum needs to embrace values that are cherished

by society in consideration of other environmental, economic, and political nuances that are submerged in the curriculum to address the different needs of society.

It can be noted that the weight placed on the cognitive aspect of the curriculum in higher education institutions in South Africa seems to reduce the focus on the social dimension to zero, which contributes to the perpetuation of inequalities and a skewed representation of some of the stakeholders (Blignaut, 2021). The contention is that students cannot be prepared solely for the world of work while overlooking their moral obligations as responsible and critical citizens who function in a democratic society. The implication is that the focus must not rely heavily on Western epistemologies, but consideration must also be given to Indigenous epistemologies as part of the pluralism and diversification of needs to be embraced in the curriculum. The social element of the curriculum thus reiterates the idea that knowledge is not a supernatural phenomenon, but is socially generated (Young, 2008), which means that the curriculum must consider the society is supposed to serve. This has further implications for the type of graduates that are to be developed to fit to context and other contributory factors at play in entirety.

Hoppers's (2016) contestation considers knowledge pluralisation to accommodate different knowledge types to embrace multiple needs of society. This implies involving and satisfying all stakeholders that are affected by the curriculum including consideration on embracing the type of students that are to be developed, their needs, and emotions on how they are affected by the reality with which they are faced. However, my contestation is that the cognitive aspect of curriculum serves an important role in preparing students to become critical and analytical thinkers who can be able to contribute towards policy debates, planning, and the correction of some of the errors that slacken the

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progress of the society, should not be neglected. Therefore the status of theoretical knowledge in the curriculum must not be lost in the curriculum during the process of diversifying to make it relevant to the context. In the eyes of Giroux (2016) curriculum needs to embrace the civic, political, and moral obligations of a society. This means that society must reap the benefits of a curriculum that aligns with their aspirations in a democracy.

According to Patel (2003) graduates must integrate both cognitive and graduate attributes across disciplines because a stand-alone higher education curriculum delivery which place focuses on hard skills seems to be no longer relevant in the knowledge expansion age. Balancing disciplinary knowledge and competencies is what (Wald & Harland, 2019) refer to as knowledge pluralism whilst (Maton, 2014) refer to it as a coalition of minds that spread beyond time and space, offering theoretical knowledge a space that cannot be eroded during the process of positioning graduate attributes, technology and other knowledge types representing the mix of stakeholders. The assertion is that the integration of theoretical knowledge and graduate attributes in the curriculum content sets the stage for active learning among students, the enhancement of self-efficacy including the ability to successfully adapt to modern-day demands (Ballen *et al.*, 2017). To Römgens, Scoupe and Beausaert (2019) a graduate exemplifies competencies that do not only feature in the world of work, but in social relations with peers including moral practices that elevate productivity in the workplace and indirectly to the growth of the country. Therefore, what makes a graduate, is a conglomerate of several values, namely achievements, knowledge, skills, and personal attributes.

4.2.5. The workplace

The development of strong work ethic and graduate attributes can give prospective graduates a better advantage in the workplace (Clarke,

2017). Curriculum discourses must thus focus on some of the gaps and new adaptations that need to be done to counteract some discrepancies and bridge a balance by developing students to be successful in their future career trajectory and their personal development. For instance, one of the existing gaps that most employers are pointing at includes the underdevelopment of graduate attributes which many graduates possess, but do not match the required level and expectations of employers' needs (Singh & Jaykumar, 2019). Evidence indicates that one of the contributing factors to unemployment among some graduates is the lack of essential skills needed to carry the vision and strategic goals of the employment enterprise (Epure & Barna, 2021). Arguably, the investment in graduate attributes forms part of the graduates' career success which can create leverage for better employment prospects (Charlton, 2019). Thus skills employees possess form part of the hallmark of a company or institution which can either break or put a company on the map

Patacsil and Tablatin (2017) posit that when encumberments are recruited or hired graduate attributes such as teamwork, communication, leadership, and critical thinking are sought by employers and are rated high including technical skills. Within the ambit of the WIL module students are tasked to perform certain tasks given as group activities and this can enable them to move out of their comfort zone where they use technology and apply graduate attributes, knowledge, and inherent qualities during their engagement with their peers. What has been established by Vanitha and Jaganathan (2019) is the idea that graduates who developed their graduate attributes during curriculum delivery can cope with pressure, collaborate with others, and can also handle both criticism and conflict. In most cases, higher education is often blamed for not equipping students with the relevant skills that are to be used in the changing 21st century (Hurrell, 2016).

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Hlavackova, Lenocho and Brezina (2016) found that the employability of an individual is the capacity to adapt to professional demands and the current dynamics of new labour markets. Thus graduates who are entering the workplace use disciplinary knowledge and graduate attributes with which the curriculum has capacitated them. Amongst other attributes they are measured against, is their ability to work effectively with others and how they contribute to productivity which adds value to the knowledge economy and the socio-economic situation of the country (Majid, Hussin, Norman & Kasavan, 2020). Consequently, many nations globally are emphasising skill development to prepare graduates for the world of work as per the skill requisite demanded by employers (Abelha, Fernandes, Mesquita, Seabra & Oliveira, 2020). This means that professional qualifications alone are not enough in the workplace, graduate attributes are also required because of the increasing need for employment skills and technology to keep pace with global market competition in the everchanging trends.

Although graduate attributes are difficult to measure (Majid, Eapen, Aung & Oo, 2019) assert that the workplace needs both graduate attributes and hard skills. The implication is that the desired status of enhancing the socio-economic aspects of a society can be bleak if some changes are not initiated in the curriculum delivery placing value on both graduate attributes and hard skills. Other than that, the curriculum needs to equip students with organisational enterprise skills to enable students to also follow the entrepreneurship journey and become job creators instead of increasing the number of job hunters (Okoye, 2017).

The assertion presented by (Tynajala, Heikkinen & Kallio, 2022) is that employees' theoretical knowledge embedded in professional qualifications is critical but that alone is not sufficient if it is not complimented by graduate attributes. This suggests that in the 21st-century world, institutional capacity's ability to innovate relies on a set

of diverse skills offered in the curriculum. Vasanthakumari (2019) posits that both cognitive abilities and graduate attributes are the hallmarks of professionals who can synthesise information, interpret and analyse information, communicate findings, and innovate, using critical and lateral thinking skills. Such a merge therefore means that there is a need for curriculum revitalisation to accommodate activities that would enable students to use both cognitive abilities and competencies. Also implied is the need to merge cognitive and graduate attributes to enable leaders in higher positions to be able to communicate organisational vision and goals.

4.2.6. A General Grouping of Graduate Attributes

Kashami and Curi (2023) indicate that graduate attributes grids may vary but they have common elements that classify them as skills relating to social, methodological, and personal attributes. The assertion is that professional skills are not the only skills needed for employment purposes but are needed for civic engagement and personal growth (Qizi, 2020). Some of the graduate attributes are thus subsequently explained:

Communication Skills:

Communication skills include dialogue and strategic communication such as public speaking, contributing some inputs in meetings, conveying, transferring, receiving information, sharing ideas and feelings, and communicating to solve problems (Shirazi *et al.*, 2014). Communication also applies in different social contexts: it can be done orally and in a written form, interpersonally or electronically. Also, information Technology (IT) has become incredibly important as a significant part of communication which brought other changes of written communication that can be done, via emails, chats, or social network comments, presentation skills, negotiation skills, and client

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communication, including active listening, which are skills that are highly demanded by employers (Ibid).

Complex Problem Solving:

Complex Problem Solving involves the ability to think in different ways by weighing different options various options and viewing a problem from different angles to find the most suitable answer. It involves thinking and applying knowledge in complex situations and is used more during critical situations. It can be applied in the workplace, in society to solve conflict, and in various contexts (Patacsil & Tablatin, 2017).

Teamwork:

Teamwork includes collaboration and putting heads together in small groups towards achieving a common goal. Collaborative working helps to generate ideas that assist organisations in identifying and solving problems effectively as well as creating relationships that boost individuals' confidence (Khalid *et al.*, 2021).

Leadership Skills:

Leadership can be described as the ability to influence decisions and motivate others in the organisation (McGunagle & Zizka, 2020). According to (Kissi *et al.*, 2019) leadership skills are mostly valued in organizations as a citizenship behaviour that steers those that are led toward positive outcomes and are essential for the continued viability of an organization. It thus includes a display of intrapersonal skills of complex soft skills combined with logic and self-management skills (Ibid). In a social context leadership aims at enhancing engagement, empowerment, and participation to bring together diverse contributions and inputs to steer the organisation towards the right path in line with policy implementation by facilitating the correct behaviour whilst sustaining standard citizen behaviour (de Geus *et al.*, 2020). Leadership is an applicable and sought-after competency that

determines productivity and progress both at the workplace and in social contexts through a display of sound behavioural traits (McGunagle & Zizka, 2020).

Analytical and Critical Thinking skills:

Personal skills indicating how individuals plan and achieve their goals resemble cognitive skills, such as knowledge and thinking skills (Engelberg, 2015). Ability to analyse information and use logic to address the issues, identify the strengths and weaknesses of alternative solutions or approaches to problems, and assess performance to make improvements or take corrective action (Ibid). It also includes coping with ambiguity/ uncertainty, the ability to handle personal and work-related problems in overly complex, dynamic environments or unclear information, pressure, stress, criticism, setbacks, and personal and work-related problems (Ibid).

As stated by Setiawati and Corebima (2017), critical thinking skills are not inherited but need to be learned and are used to examine, analyses, interpret, and evaluate (Hidayah *et al.*, 2017). The same opinion by Karim and Normaya (2015) that the ability to think critically is particularly important to have, because having the ability to think critically can help us think rationally in solving problems and looking for and developing alternative solutions to these problems. Thus critical thinking skills can assist students in acquiring knowledge and attitudes which are key components of the curriculum.

Creativity and Innovation:

It is perceived as the ability to view a problem in different creative ways by stretching one's imagination and thinking to generate new ideas (Malik, 2019). Innovation skills play a significant role in the age of technology and knowledge expansion to produce models and innovate new things that can be beneficial to consumers, and it is mostly valued

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by companies as a competitive advantage in companies to improve their products (Ibid); thus needed for graduate readiness. Creativity further contributes to helping leaders and managers to use analytical and intuitive thinking to keep their organisation on the go through discoveries that are made using technology to access information (Bawa, 2014). This needs graduates who seek employment to possess such attributes to solve problems.

Lifelong Learning Skills:

Lifelong Learning Skills refers to a combination of skills that provides a path for individual development and may include the following skills: Self-Awareness, initiative, flexibility, responsibility, persistence, eagerness, goal-oriented, and motivation (Robles, 2012). The 21st-century world of changes demands employees who are eager to learn new things to keep the company abreast of new knowledge and technologies that can contribute to productivity and progress. There is a need for graduates to adapt to changes, to be flexible, focused, and committed to directing the organisation towards the realisation of its short- and long-term goals, therefore companies recruit graduates who possess such competencies to contribute to the development of the organisation (Ibid).

Value orientation:

Robles (2012) emphasises the maintenance of ethical behaviour, a display of values, and certain work ethics which involve respect, trust, responsibility, and honesty in dealing with clients and other employees including how the organisation's resources are used. Hence such competencies are expected from graduates who enter the labour market.

Organisational/Managerial skills:

The term organisational/Managerial skills refers to the ability to take initiative and the capacity to manage one's time, manage goals independently, plan, produce with others, and identify the best people for the job (Robles, 2012). It is a skill that is needed by the workplace for effective and efficient use of time and to produce or complete work according to certain expectations are some of the competencies that employers look for when recruiting employees (Ibid).

Emotional Intelligence (EI):

It is also another related skill with a sociological lineage whilst at the same time is linked to performance and encompassing several personality traits, namely social graces, personal habits, and optimism that compliment hard skills (Kingsley, 2015). People possessing emotional intelligence skills establish meaningful relationships that enable the expression of emotions and management thereof, they turn out to be better listeners, leaders, and decision-makers (Ibid). In the changing and fluid world balance between emotions and logic is needed to calm individuals to make informed decisions and solve problems by balancing emotions with reasoning skills (Ibid). Aided by critical inquiry individuals are enriched with personal research knowledge and skills that are regarded as key graduate attributes. This means it makes an individual develop competencies that enable one to work well with people to achieve goals, mainly being pleasant, cooperative, sensitive to others, and easy to get along with.

Digital skills/Technology:

The term digital skills refers to the ability to use digital media to develop productively, creatively, and critically reflect on their usage and impact on society and work (Montresor, 2016). In the digitally driven future, digital literacy is an essential requirement for individuals to effectively navigate their work, education, and daily lives including using

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technology in a technically, economically, socially, and environmentally responsible manner (Ibid). Digital skills have become indispensable components of skillsets, requiring higher education to prepare graduates for future skills (Ibid). This means to communicate and share information technology as one of the skills needed plays a huge role in our lives and thus needs curriculum transformation to be infused appropriately.

Evidently, competencies constituting graduate attributes discussed above complement theory and contribute towards the holistic development of students in the 21st-century world.

Table 4.1 below illustrates the complex and dynamic nature of graduate attributes. According to de Vos *et al.* (2021) they do not only contribute to skills needed for employability, but they encompass social, personal, and methodological elements that constitute both subjective and objective components of personal development and socio-economic progress.

Table 4.1: An adapted Soft-skills classification derived from Grisi (2014)

Personal	Social	Methodological
Learning skills	Communication	Customer/User orientation
Professional Ethics	Teamwork	Continuous Improvement
Self-awareness	Contact Network	Adaptability to Changes
Tolerance to stress	Negotiation	Results orientation
Commitment	Conflict Management	Analysis Skills
Life balance	Leadership	Decision Making, Critical Thinking and Problem-solving skills
Creativity/ Innovation	Culture Adaptability	Management Skills,

Mediation	Object-oriented	Personal equilibrium
Self-Management	Personal habits	Emotional Intelligence
Teamwork	Interpersonal Skills	Productivity
Networking	Continuous Improvement	Cultural Adaptation
Self-respect	Values/Moral skills	Professional Ethics
Entrepreneurial skills	Business Acumen	Numeracy
	Research, information management and technical skills	

4.3 Theoretical framework

This chapter adopts a fusion of constructivist theories with the belief that learners are not passive in the process of acquiring knowledge and graduate attributes. Piaget's (1983) is one of the dominant theories that the chapter adopts, as it highlights how learning occurs through the instruction given by the facilitator and how learners' active participation in their learning experiences exposes them to knowledge and skills. In essence, the development of graduate attributes offers hands-on experience and problem-solving mechanisms that are regarded as important schemas in Piaget's theory. The implication is that students interact with others and further learn other competencies which enables them to interpret and understand the world better. Experiences learners are exposed to are thus perceived as a support base for active engagement and exploration of the physical and social world (Lazarus, 2010).

Unavoidably, the world of work provides other learning opportunities and a hands-on experience for learners to develop more skills outside the classroom situation. Engagement and participation of the learner with the socio-cultural world is also expanded with the incorporation of other learning theories. To that effect, the curriculum requires

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transformation to accommodate an array of different learning opportunities and to enable dynamic advancement and adaptation to 21st-century trends. In this chapter, Piaget's learning theory is integrated into Albert Bandura's (1986) socio-cognitive theory which perceives human functioning as the result of the dynamic interaction of personal, behavioural, and environmental factors. This implies that learners can sharpen their skills and develop their traits through interaction with others and the world of work. Thus curriculum through the WIL module can support learners' cognitive, emotional, and social qualities by employing both hard and graduate attributes. The idea is further validated by Merriam, Caffarella and Baumgartner (2007) who define learning as a process and not a final product. Similarly, this creates a synergy of cognitive, emotional, and environmental influences and experiences that enlarge people's knowledge, skills, values, and worldviews (Ibid).

Since learning is not only viewed as a cognitive process but a process of social participation, the implication is that global trends and workplace learning can influence how people learn and build knowledge. Therefore changes in the curriculum need to become relevant, to recognise teamwork, experiential activities and partnership which are constituents of graduate attributes, including the use of technology which aligns with the constructivism theories of both Piaget (1983) and Bandura (1986). The integration can bring a dynamic contribution to personal, development, behavioural change, creativity, and environmental sustainability including a sense of creativity in the development of knowledge and skills.

4.4 Research design

Since the curriculum is aimed at developing students' personal lives and career development, a literature review study was carried out to identify

features of curriculum relevance in the 21st century on the value of graduate attributes to industries, students, and other stakeholders. The demand and need for graduate attributes in the marketplace, to complement hard skills provided the main reason for the review of the literature. The other reason is the limited investigation around the discourse of graduate attributes including the difficulty to measure them. Guided by an interpretive paradigm, data was gathered from different sources to examine the value of graduate attributes to different stakeholders. Literature was thus reviewed and analysed by the concepts and patterns that emerged (Creswell & Poth, 2016).

4.5 Findings

Table 4.2: Findings of literature review

Theme/Concepts	Author	Year of publication
A growing interest in the value of graduate attributes in education and business	-Succi and Canovi	2020
Competencies/graduate attributes respond to socio-economic needs	-Caspersen, Frølich and Muller	2017
Curriculum based on scientific knowledge and application	-Wald and Harland	2017
Curriculum placing value on competencies to complement knowledge	- Villar-Onrubia and Rajpal	2016
Curriculum fitting into international standards	- de Wit, Gacel-Avila, Jones and Jooste	2017
Curriculum addressing various needs and logics of different stakeholders	-Annala, Lindén, and Mäkinen	2016; 2015

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Curriculum relevance, the prime factor for curriculum transformation	-Nagarajan and Edwards	2014
Curriculum integration transcending all disciplines	-Drake and Reid	2018
Investment in human capital	-Hora <i>et al.</i> -Abenathy	2016 2018
Competencies build character	-Robes	2012
Human desirable traits contribute to the nation's success.	-Freire - Pachauri and Yadav, 2014.	1992;
- competencies enhancing the efficiency of hard skills.	Geissler, Edison and Wayland,	2012
-Some competencies are equivalent to cognitive skills	-Hora <i>et al.</i>	2016
-Graduate attributes balancing the scale - Hard and soft skills together -Balancing disciplinary knowledge and competencies	- Hora <i>et al.</i> ; Nooriah and Zakiya -Wald and Harland -Maton and Moore	2016 2015 2017 2010
-Graduate attributes are employability skills	- Patacsil and Tablatin,	2017
-Technological application preferred by students in the 21 st century	-Ballen <i>et al.</i>	2017
-Engagement in a pluralistic democracy to realise human rights principles	-Qizi; Cinque	2020; 2016
-Cognitive abilities and graduate attributes enabling synthesis of information, interpretation, and analysis using critical and lateral thinking skills.	- Vasanthakumari	2019

4.6 Discussion

Global changes do influence changes in education and in the business sector; hence a growing need exists for graduate attributes to be given an important space in the curriculum (cf. Succi & Canovi, 2020) because they create better opportunities for students in the world of work and enable them to be productive to enhance companies' turnovers and the overall injection to the socio-economic growth of the country leading to the progress of a nation. Lifting the place of graduate attributes in the curriculum thus becomes a shift from the traditional curriculum approach of placing focus mainly on theoretical knowledge or factual knowledge.

As a result, the development of competencies is revealed as significant in complementing knowledge (cf. Villar-Onrubia & Rajpal, 2016). It is also within the precepts of constructivism that the development of cognitive and non-cognitive elements embraced in theory and graduate attributes are both valued for active engagement with diverse contexts, combined with personal development to enhance innovative and creative problem-solving.

Furthermore, global trends and pressure from different stakeholders and societal challenges reveal the significance of human capital which translates towards placing value on personal and social traits needed in the 21st century which demands the acquisition of both hard and soft skills (cf. Nooriah & Zakiya, 2015). Competencies thus are significant to enable individuals and society to cope with and address the 21st-century demand (cf. Tahirsylaj & Sundberg, 2020) while research also highlights the prime factor for curriculum transformational curriculum relevance (cf. Nagarajan & Edward, 2014). On the other hand, the role played by graduate attributes for personal, career development, and work readiness validates the motive for curriculum transformation (cf. Ibid). In the same vein, research revealed that workplace skills are mostly

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needed in the workplace (cf. Cimatti, 2016). Thus the 21st-century classroom activities that contribute towards the development of teamwork, communication, self-management, analytical skills, and the ability to apply knowledge to solve problems are graduate attribute features that complement theories including a logical approach to problems. To that effect, the curriculum needs to be changed to place graduate attributes on a pedestal where they get to be recognised as important factors that enable the curriculum to be accommodative of different needs of different stakeholders.

It has also been indicated that a relationship between technology, graduate attributes, and hard skills also contributes to an inclusive curriculum that equips students with the necessary skills and knowledge to cope with the changing world. The objective therefore must be to develop students in different aspects inclusive of cognitive, emotional, social, and digital skills. Technology, on the other hand, has proven to play a huge role in communication and benefits individuals, companies, and the nation at large; hence technological skills are required to be integrated into the curriculum to navigate knowledge expansion and the technological divide in a web of networks (cf. Guo *et al.*, 2019). In the same breath, Barbara (2016) has indicated that technological skills are highly in demand at the workplace. Since relevancy and connectivity to the real world are of paramount importance, a combination of graduate attributes, knowledge, and technology in the curriculum demands curriculum transformation to restructure and bring together all different components of the curriculum, particularly graduate attributes in their respective dominant positions instead of putting them secondary to other knowledge types. What has also become evident in the investigation, is the idea that changes in the 21st-century curriculum are not only environmentally responsive, but they place students at the centre of learning and engage them as active participants towards achieving learning goals or outcomes. Therefore curriculum

transformation which contributes to the socio-economic success of all stakeholders involved by placing value on graduate attributes, hard skills, and technology is not only relevant, but it is ideal in the realm of global competitiveness (cf. Caspersen, Frølich & Muller, 2017).

Further revelations point to the fact that the development of graduate attributes in the curriculum are not following a silo, idealistic traditional way, but operates in synergy with the real world and is an investment in lifelong learning skills that have been internalised and remain with individuals permanently and to be used in varying situations (cf. Hora *et al.*, 2016). Research further reveals that curriculum provision in higher education is not only meant to prepare students for job employment but also to provide them with knowledge, technical expertise, and skills that can enable them to participate and make informed decisions in a pluralistic democracy to realise human rights principles such as respect for dignity, civic engagement responsibilities, ethical behaviour, and sustainability issues (cf. Hora, Benbow & Oleson, 2016).

Equally important is the discovery of a transformational curriculum approach that benefits different stakeholders. It is thus suggested that the curriculum be environmentally responsive, and culturally relevant, connecting knowledge, competencies and technology, while relational – having a relationship with society, business, and the environment. Most importantly, the Higher Education curriculum must position graduate attributes alongside theoretical knowledge. In the same breath, one of the other personal traits that attract different stakeholders has been revealed to be Emotional Intelligence, as it enables individuals to manage emotions, understand their emotions, apply them positively, and control them when confronted with difficult and changing situations. Leadership capabilities also assist graduates in navigating through conflicts and challenges.

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While graduates are perceived as predicting individuals' success in various spheres of life (cf. Cinque, 2016), society expects graduates to be proactive, critical and engaged citizens who can perform leadership roles, exemplify sound behaviour, including the ability to analyse and solve problems (cf. Bawa, 2014). Thus integration in a curriculum which represents different knowledge types makes curriculum not only relevant but to cut across disciplines focusing on the transmission of theoretical knowledge, skills and technology beneficial to building students' character through cognitive and non-cognitive skills that enable graduates to use knowledge and skills to navigate and cope with diversified complex problems in their personal space, the world of work as well as becoming responsible citizens. Also, the application of social skills such as communication, problem-solving, decision-making, networking skills, and the use of technology enables one's interaction with a diverse host of people. The discussion thus elevates the significance of an integrated curriculum.

4.7 Conclusion

Considering the findings, this chapter concludes that a shift of perception in valuing graduate attributes as complex and important competencies in the current changing times demands curriculum transformation. It can also be concluded that a transformed curriculum in Higher Education equally positions and values both content knowledge and graduates' attributes to produce graduates who not only play a part in the labour market but can fit in different real-life contexts through a display of professional behaviour and a balanced development of both cognitive and non-cognitive capabilities. Active participation in socio-economic or civil matters as a sign of responsible citizenry or the ability for self-employment denotes graduates who are products of a transformed curriculum. The findings opposed the idea

that non-cognitive skills are simple and require less attention, adding to the conclusion that cognitive and non-cognitive skills are equally important and complement one another. The findings validate the conclusion that new developments in how students learn, and how they access information require a transformed curriculum.

The conclusion drawn from the findings is the idea that by educating and developing students for job readiness, and personal development, socially engaged individuals can take responsible roles in the society where they live in sync with the transformational agenda. It can also be concluded that a transformed curriculum that integrates graduate attributes, hard skills, and technology achieves different aims and appeals to different stakeholders. Hence there is a greater need to produce students who can interpret and analyse knowledge and at the same time, can innovate, solve problems, think critically, and collaborate with others, which all are all graduate attribute principles needed for an all-rounded citizen, who is productive at the workplace and can cope with different challenges in the world.

The implication for a transformed curriculum is the value of embracing and integrating multiple knowledge types as a balanced approach that addresses different stakeholders' needs. To that effect, curriculum transformation requires adaptation to current trends, and socio-economic and political nuances that are of value to both society and the marketplace. The development of graduate attributes in synergy with theory and technology is the creation of innovative solutions enabling society to solve problems using technology. The integration of technology in the curriculum also makes learning flexible and is valued in opening links with other nations to massify learning, benchmark, and get exposure to other nations' standards, values, and work ethics to contribute to the progress and sustainability of the nation. Neglecting the role played by technology in the curriculum and depriving graduates

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of technological skills has implications for companies; they recruit employees from foreign countries instead of using local people, and these further impact the socio-economic progress of the country negatively and increase the number of unemployable graduates.

The implication of human philosophical approaches such as constructivism and cultural capital theories is their significance in placing learners' activism at the centre of the curriculum and considering how they learn including the relevancy of the curriculum in consideration of their needs. Thus the development of competencies has implications for learners to be able to fit well in different settings and to build personal traits and attitudes to complement knowledge that has been gathered which enable graduates to participate in the prevailing socio-economic, cultural, and political state of their country. Lastly, the other conclusion drawn from the findings is that an integrated curriculum model that develops and benefits graduates from various angles covers the Know, Be, and Do and is suggested as the best approach to produce an integrated multi-dimensional curriculum. Such a transformed curriculum places focus on knowledge as well as on the building of sound character traits of graduates who are active, critical, and engaged citizens, who can apply the knowledge and skills they have acquired in any given situation. The recommendation for further research is on how best facilitators can be trained effectively in integrating and assessing graduate attributes alongside theoretical knowledge.

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CHAPTER 4

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