Andragogical and Pedagogical Recipe for Instructional Design and Delivery in Institutional Programmes: Lessons and Options for Zimbabwe

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BOOK SYNOPSIS

The study made a comparative analysis of pedagogy and andragogy as models of teaching-learning in higher education institutional programmes. This stemmed from the background of a raging debate on what constitutes an effective model of design and delivery between pedagogy and andragogy in institutional programmes involving both traditional and non-traditional students. What is known in academia is that pedagogy and andragogy are instructional models that are employed in university teaching-learning. However, missing in critical analysis is the best model for institutional learning between the two and whether these could be considered exhaustive especially in the context of Education 5.0. The research examined the aspects of an institutional learning model that makes it effective and efficient. It also examined the perceptions of the professoriate and students on what they thought was the most impacting model between pedagogy and andragogy. The effect of Minimum Bodies of Knowledge (MBK) on learner, societal and developmental needs as well as the effect of government Strategic Educational Directives (SEDs) on the choice and impact of institutional model of learning were also interrogated. The study also looked into what constituted the connoisseurship of teaching in institutional learning. The participants included Chairpersons of Departments, lecturers and students from the University of Zimbabwe's Faculty of Education, (n=24). Within the epistemological and ontological constructs of pragmatism, the study adopted a mixed approach and a sequential exploratory design. The study came up with five key findings. Neither pedagogy nor andragogy was most impacting, but the two were contextually effective. There was too much theorisation in institutional learning. Though pragmatic, Education 5.0 had compartmentalised education thereby relegating other academic disciplines to the peripheries of development. MBK were not being thoroughly done and were taking long to be reviewed to the detriment of learner, societal and developmental needs. The ineffectiveness of institutional learning could also be attributed to unqualified lecturers in the teaching learning of adults.

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CHAPTER 1:
The Concepts of Andragogy and Pedagogy Contextualised and Explained

This chapter presents an introductory background to the study as follows; statement of the problem, purpose of the study and research questions. It also looks at the assumptions underlying the study, significance of the study, scope of the study, definition of terms, and chapter summary.

The word andragogy comes from the Greek word *andra* which means 'man' or 'adult' and *agogas* which means 'leader' (Deveci, 2007). In short andragogy is a model of learning that was coined by Alexander Kapp in Europe in 1833, later introduced in America by Edward Linderman in 1927 and popularized in Europe by Malcom Knowles. It is a set of assumptions and principles guiding the planning, management, implementation, and evaluation of teaching and learning involving adults (Ekoto & Gaikwad, 2015; Knowles, 2011; Reischmann, 2004). Andragogy is premised on five principles which are the self-concept, readiness to learn, orientation to learning, learner experience and learner motivation (Reischmann, 2004; McGrath, 2009; Knowles *et al.*, 2012).

Pedagogy is derived from the Greek words, *paidos* which means 'child' and *ago* which means 'to lead a child', thus it has been defined as the art and science of instructing children so that they become functional in society (Ekoto & Gaikwad, 2015). In contrast to andragogy, the underlying assumptions in pedagogy are that; the experience that the learner brings to the learning environment is of little relevance to the design and delivery of instruction. The learning is teacher centred and subject oriented. The learner is extrinsically motivated through tests, punishments and rewards. The philosophical underpinnings of pedagogy are that learner needs are derived from the Minimum Bodies of Knowledge (MBK) as directed by the national curriculum. However, in andragogical philosophy, the learner is involved in the design of instruction and is a participant learner up to the process of evaluation. In short, pedagogy and andragogy are learning models whose difference centre on the role of the facilitator, the learner, the administrator, agencies, and society from the process of needs analysis up to evaluation and feedback (Deveci, 2007).

The concepts of andragogy and pedagogy have been in existence since time immemorial. This is because man has been learning since birth, thus at one point or the other, the two concepts characterised the learning process knowingly or unknowingly (Raymond, 2008). Whilst theories, concepts and assumptions have been developed for institutional programmes involving adult learners, none have been

robust as to assert themselves as the connoisseurship of higher education teaching and learning. To this end, the impact of different learning models in institutional programmes has remained highly contested.

Usman (2015) and Tight (1996) agree that though seen dichotomously, the models have got functional overlaps but one could be having more impact on the teaching learning process depending on the context. The effectiveness of the models would depend on the degree to which administrators, the professoriate and students adopt and adapt to the multiformity of higher learning among other situations. Therefore, higher education institutional learning in most countries has been defined as progressively regressive (Garuth, 2014). This is because when learning models applicable to nursery and kindergarten are continuously applied up the ladder, learning would become regressive. To this end, some universities have continued to produce dysfunctional graduates, products of Silencing Education who are mere conformist of the industrial discourse (Mahmoudi *et al.*, 2014). This is supported by Bryson (2013) who argues that despite the diverse and multiplicity nature of adult learners in universities, the emphasis on design and delivery has basically remained on uniformity and conformity rather than multiformity. It is this current practice of dumping down content, poor needs analysis and poor methodological approaches that has led to ineffective education outcomes in Zimbabwean universities and colleges. This has negated the industrial processes and developmentalism. This therefore shows that the institutional model of learning is not holistic in addressing the learner and societal needs.

The Nziramasanga Commission, introduction of the New Curriculum and recently Education 5.0 are a justification to show that the government is in search of a more impacting model of learning. It shows serious concern with regards the effectiveness, efficiency and efficacy of the teaching-learning process in the tertiary institutions to perpetuate industrialization and sustainable development. Mohammed *et al.* (2018) in the Nigerian context and Addae (2016) in the context of South Africa and Ghana argue that developmentalism of a nation hinge on an effective education system whose curriculum is reflective of the national and societal aspirations. They argue that the curriculum should be reflective of the students' learning gaps complimented by varied and effective methodologies. In this vein, the Zimbabwean colleges and universities need to address the problem of lack of a holistic and impacting model of learning.

It should be appreciated that the teaching-learning process existed in the pre-colonial epoch, thus pedagogy and andragogy existed in the context of indigenous African education systems (Mutunhu, 2011). The society determined what the youths would learn, and the elders would teach the youths which is typical of pedagogy. However, on the andragogical perspective, the learning was to socialize them into

being functional men and women in the society through immediate application of learnt roles and skills. The philosophical underpinnings that include ethno-philosophy, philosophic sagacity, and nationalist-ideological philosophy resonate well with the concept of andragogy (Chukwu, 2002; Nafukho *et al.*, 2005). It can therefore be seen that there was a combinational use of the two models implying a lack of an absolute model between the two. Therefore, the lack of knowledge on what then constitutes the connoisseurship of institutional learning can be traced from the pre-colonial epoch and was further exacerbated by the adoption of perennialism in the colonial epoch to the post-colonial epoch. The varying perceptions and arguments with regard to the two models show that there is no absolute model for institutional programmes in higher education. There is need to determine the absolute model between pedagogy and andragogy or combine them in a continuum of Pedagogy-Andragogy-Heutagogy (PAH). It therefore calls for the need to scrutinize the educational philosophy that influences the strategic curriculum design. This is because the tertiary institutions would be guided by the strategic (national) curriculum as influenced by the national philosophy.

The debate on the impact of pedagogy or andragogy is further made complex by arguments that whilst underlying assumptions are different, education and learning are fundamentally the same wherever and whenever they occur (Kemppainen, 2017). In agreement, Chan (2010) argues that children, youths and adults can learn effectively under the same philosophy and principles. University of Zimbabwe is one institution in which some academics and students have argued that the concept of pedagogy should not be treated as a preserve of children but university adults as well. Contrary to the assertion of learning being universally the same, Allen (1979) cited in Christian (1982) observes that andragogical and pedagogical learning cannot have the same impact in university learning. This is because the university learning society has got students whose physiological and psychological orientations have seen the test of time, thus may have developed different learning styles due to problems of retention among others. These variations have led to other lecturers being labelled bad teachers depending on what students perceive to be the most efficient and effective instructional design and delivery model. This therefore necessitates an investigation as to what then constitutes the connoisseurship of institutional higher learning.

Whilst Knowles *et al.* (2012) acknowledge that the learning of children and youths is different from the learning of adults, it remains unclear which model has got the greatest impact for institutional programmes involving adult learners. Raymond (2008) from her studies at the University of Exerter argues that there still exist some inconsistencies with regards the approaches or models that constitute the connoisseurship of higher education teaching-learning. The argument has been that andragogy is uniquely ideal for the learning of adults and produces better

competences when employed in higher education than pedagogy (Southhard, 2017). To this end, there are administrators, educators and students in Zimbabwean higher education institutional programmes who subscribe to the pedagogical practices while others contend that andragogy is the best model for adult learning. This has created a situation whereby students at various tertiary institutions have complained of not being taught when andragogical principles are implemented. Others have complained of reliving the primary and secondary type of learning of prescription when pedagogy of adults is implemented.

In line with moving the national education strategy from Education 3.0 to Education 5.0, some educational administrators have argued that the effectiveness of pedagogy or andragogy should not be assessed from the academic success standpoint alone. It should also be based on whether the graduates are meeting the demands of the fast-changing global job market in what has been termed heutagogy (Blaschke, 2012; Halupa, 2015). The chronicled variations in higher learning institutional programmes show a discord in what really is the best model of teaching learning or the connoisseurship of higher education teaching-learning. This therefore necessitates a comparative analysis on the impact of the two models to determine an ideal model for higher education institutional programmes.

The purpose of the study was to make a comparative analysis on the impact or the efficiency, effectiveness and efficacy of andragogy versus pedagogy as means of teaching-learning in higher education institutional programmes. The study sought to provide a perspective in to what constituted effective and efficient practices of university teaching-learning. It also extrapolated the nexus that existed between the system factors, school factors and classroom factors for both andragogy and pedagogy which brought to the fore the basis for comparison. By and large, the study sought to determine if either pedagogy or andragogy does exert the greatest impact on the design and delivery of institutional programmes in higher education so that it could be adopted as a model of higher education learning. It sought to expose the weaknesses of both models, their functional overlaps and paved way for the development of a more holistic and comprehensive model of higher education. The following research questions guided the study:

1. What are the tenets of teaching-learning that must be achieved or addressed for an education model to be considered effective in higher education institutional programmes?

2. Can higher education institutional programmes have impact on learners and the national development discourse based on learner centred needs alone without the national directive to address Minimum Bodies of Knowledge (MBK)?

3.   To what extent does the professoriate, administrators and students perceive the impact of pedagogy and andragogy in the teaching learning in institutional programmes?

4.   Is there an absolute model from the two that can be considered to have more impact in higher education institutional programmes, or they have got functional overlaps?

5.   How do Strategic Educational Directives (SED) such as the national curriculum, Education 5.0 etc. influence and impact on models to be adopted in higher education institutional programmes?

In the context of Leedey & Ormrod (2010), assumptions are a basic tenet of research, the absence of which means that the research problem itself does not exist. They are somehow out of the researcher's control and their absence affects the credibility of the study (Simon, 2011). The paradigmatic assumptions underlying the Mixed Paradigm Approach are that positivism and post-positivism when integrated within the same research would achieve complementarity. This was necessary especially when the efficiency, effectiveness and efficacy of pedagogy and andragogy were to be determined. This assumption is supported by Greene & Caracelli (2003) in Simon (2011) who posit that to determine the value of a social programme or its efficacy, the researcher should employ all the methods at their disposal to generate sufficient and supportive evidence to arrive at conclusions and decisions. The principal assumption underlying this research is that the ontological and epistemological orientations of qualitative and quantitative research differ and thus reality and knowledge are perceived and generated differently. Therefore, the researcher sought to unearth reality and construct knowledge about the phenomenon from different paradigms.

The researcher assumed that the participants would constitute a representative sample to justify the research's credibility, dependability, transferability and generalizability. One of the assumptions was that all the lecturers have their own teaching styles that they developed and perfected overtime and being driven by different philosophical thoughts. These styles have led them to be regarded as best or bad professors depending on the pedagogical or andragogical orientations of students. The other assumption was that the pedagogical orientations to which university students got subjected to during their primary and secondary education would to a certain extent determine their feeling over what they thought would be the most effective teaching-learning model. The researcher assumed that the National or Strategic Orientation of education would to a greater extent influence the orientations of institutions and what they perceive to be the connoisseurship of teaching-learning. It was the researcher's assumption that overtime; university

lecturers and students have developed a way of teaching and learning that may be far more than the pedagogy-andragogy continuum. In as much as the theories of andragogy and pedagogy are understood, it was also assumed that their application and subsequent impact in the design and delivery of instruction in different contexts and programmes may not be understood. The researcher then based his study on the assumption that the University of Zimbabwe being the oldest in the country is home to academic expertise and excellence and would represent the other institutions since they are also off-shoots from it.

The significance of the study is that it sought to provide answers to what constituted the connoisseurship of institutional programme teaching-learning in universities and colleges. It also extrapolated the strengths and weaknesses of pedagogical and andragogical practices, thereby exposing areas of complementarity and confliction. It sought to expose weaknesses along the system, the school and classroom factors with an ultimate view to provide remedial action for the best impact. It sought to strengthen or demystify the perceptions that administrators, educators and facilitators have on the learning of adults in higher education institutional programmes. Over and above, the study sought to bring to the fore the constituents of positive or negative impact on educational effectiveness in institutional programmes. To an extent it reflected on the educational effectiveness of Education 5.0. It also sought to inform future policies on the necessary considerations to ensure the greatest positive impact on the teaching-learning in institutional programmes in universities and colleges. By and large, the study sought to produce a comprehensive and holistic learning model from the various adult learning models, thereby adding much to the existing body of knowledge on adult learning in universities and colleges.

The scope of the study is discussed under limitations and delimitations.
Limitations are the weaknesses, influences, shortcomings or conditions that the researcher cannot control from the methodology up to data collection, presentation and analysis which would then impact one's conclusions. Efforts must be made to circumvent the effects of limitations on the validity and reliability of the study (Simon, 2011). Self-reported data which is data from interviews has got a very high chance of bias depending on whether one is pedagogical or andragogically oriented (Hermam & Edwards, 2014). This is one limitation that the research faced but was however reduced through methodological triangulation, participant, data collection, and analysis. One limitation that characterised the research was the sample size which gave the constraint of generalizability (Stephane *et al.*, 2013; Emmanuel, 2013). However, the researcher gathered data from data rich respondents and gained insights into the phenomenon through in-depth interviews thereby circumventing the effects. The researcher disseminated several questionnaires to randomly selected respondents to cater for the qualitative weakness.

Selective plausibility in the context of Ihantola & Kihn (2011) is one limitation that faced the research. This is because whilst the current research findings could have arrived at certain conclusions, there are many studies on pedagogy and andragogy and reconciling the present findings with all these researches was difficult. To circumvent this effect, the researcher conducted an extensive review of related literature. The socio-political and economic environment in which the research was conducted where UZ churns out graduates without being employed definitely negated on the responses of other respondents and participants. In short, the above limitations impacted on the trustworthiness of the research process. To uphold the quality of the research, the researcher adopted the Integrative Framework of Mixed Methods by Tashakkori & Teddlie (2008) and Onwuegbuzie & Johnson (2006)'s Legitimation Framework.

The comparative analysis on the impact of pedagogy and andragogy in institutional programmes was a cumbersome study that required the interrogation of all higher education institutions. It would have required the researcher to deal with a very large population from colleges to universities. In this regard, it would have required an extensive survey in the research design and would have taken more time. To start with, the researcher delimited the study to University of Zimbabwe which he assumed to represent all the tertiary institutions most of which are off-shoots from the former. To this end, the administrators, the professoriate and students assumed a repository of valuable information to be generalised to other higher institutions of learning. However, UZ is made up of many Faculties and Departments, thus it was impossible to interrogate the phenomenon in all the faculties. The study therefore centred on the Faculty of Education because it has got everything to do with the teaching-learning process from the development of curriculum to the production of teachers. It is also home to a significant number of non-traditional and traditional students. The extensive experience of the Faculty of Education professoriate and the non-traditional students in the process of teaching and learning meant the results of the study would address the research phenomenon.

Chapter 1 defined contextualised the definitions of andragogy and pedagogy, provided a background of the study, research questions, purpose of the study and significance. It laid out the research assumptions, as well as the limitations and delimitations of the study. The next chapter focuses on the review of related literature.

CHAPTER 2:
Impact of pedagogy and andragogy as means of instructional design and delivery in institutional programmes: A review

This chapter reviews the literature on the impact of pedagogy and andragogy as means of instructional design and delivery in institutional teaching-learning. In addition to demonstrating knowledge of pedagogy and andragogy and the associated vocabulary, the literature review also addressed three fundamental purposes. First, it exposed the researcher to what has already been written on the topic and that which has not been written that exposes methodological, theoretical and conceptual inadequacies of the existing literature and how the present study could address these gaps. Secondly, as asserted by Snyder (2023), it exposed the researcher to experts in the field of design and delivery, the questions that they have addressed and those still outstanding that the current research would contribute towards to avoid replication of previous studies. Finally, the review allowed the researcher to contextualise his study and understand how models of institutional learning are defined and understood in international, regional and national contexts which then inform praxis.

Curriculum development requires the application of rational systematic analysis with the aim of making education more effective and efficient in responding to the learner, organisational and societal needs (Coombs, 1972; Ololube, 2009; 2013). In this regard, the principal objective of educational planning is to ensure that education becomes result oriented for the development of the individual and the society at large. In this same argument, Gboku & Lekoko (2007) advocate for the use of adult education programme development rather than planning because the latter would simply imply a prescriptive blueprint. On the other hand, development is participatory encompassing environmental analysis (Political, Economic, Social, Technological, Global and Legal factors- PESTGL), SWOT analysis, training needs analysis and clientele analysis based on programme development philosophy (Erasmus *et al.*, 2006; Nadler & Nadler, 1994; Wheelen & Hunger, 2006). The point of departure is that programme development encompasses quite a few activities that are then sequentially arranged for implementation whilst dependent on each other for input and output, thus making up a system (Kaufman, 1972; Ololube, 2013). These activities are approached differently depending on whether the programme is andragogical or pedagogical. The approach to coming up with these activities is also dependent on whether the programme is institutional or developmental.

According to Thompson (2018), the American education system is characterised by so much tension as to which model to use because of the combination of traditional

and non-traditional students that characterise university learning. The traditional students may be comfortable with pedagogy while the working adults or non-traditional component may be oriented to andragogy. It needs to be acknowledged that the process of curriculum development and the methodologies applicable to these models are different and also complimentary in certain contexts. These differences and contextual applicability determine the extent of the way that the models impact individuals. Thompson (2018) argues about mixed situations of pedagogy and andragogy, whether correctly or wrongfully. Mashak (1983) cited in Thompson (2018) argues that though pedagogy and andragogy can be complementary, their impact has to a greater extent been weakened by the inability by the professoriate to identify circumstances and contexts in which the two can have a significant impact as individual entities. In this regard, he argues that there are non-traditional institutional programmes that are made to conform to university requirements in terms of course content, methodologies, MBK and examinations. In this regard, he argues that there are non-traditional institutional programmes that are made to conform to university requirements in terms of course content, methodologies, MBK and examinations. This violates the pure andragogical model since some content and methodologies may be dictated, thus leading to unmet non-traditional learner needs. To this end, there has been fissures with the current set up at the university where certain programmes who by virtue of their clientele(non-traditional) have been directed to adopt a full-time approach. This reflects a prescriptive approach to programming to the detriment of providing education to the adult learners who have got work and other family commitments. By and large, the status quo at the university reflects the effect of SEDs in the context of school factors on educational Andragogy is a model that is premised on five principles whose thrust is learner centeredness and learner autonomy. Before the popularisation of andragogy, the students' voice in curriculum development had been topical as can be seen from Tyler (1975) Curriculum Design Model. He argues that if a student perceives the learning to be interesting and beneficial, he or she would participate in it energetically. The implication is that according to Reubenson (2006)'s Expectancy —Valence theory, the curriculum should address the learner expectations and should add value to their lives and the society at large. The Zimbabwean government's efforts to address the curriculum indicates that the curriculum does not address the expectancy and valence of the learners in the realm of developmentalism. Aoki (1993) argues about the 'otherness' of others where the focus should not be the curriculum as determined by the facilitator but others in the form of learners. Another curriculum theorist, Freire (1993) advocates for libertarian curriculum development perspective in which both teachers and students do not have a contradiction but are simultaneously teachers and students.

In line with the students' voice in curriculum development, another curriculum theorist Esner (2001, p.371), questions, "what opportunities do students have to

formulate their own purposes and to design ways to achieve them?" The above extracts from the three theorists extrapolates the fact that the need for student involvement in curriculum development has always been there even before the popularization of andragogy. However, the andragogical perspective brought in a more comprehensive dimension in which learning must be more learner centred than in the traditional pedagogical perspective.

The development of an andragogical curriculum requires learner inclusion. The learners have to determine what must be learnt, how it is to be learnt, and the evaluation of the learning process. There is need for clientele analysis so that the curriculum reflects what the clientele wants. The community as the recipient of the education must also be involved (Evans, 2016). The content should be consistent with what the community desires in line with its developmental discourse. It therefore implies that the MBK should be determined by the learners. This brings to the fore the following questions: how then does the learning conform to the national aspirations as determined by government if learners determine what they want to learn at a particular time in a particular society?; how then does the education conform to the national philosophy as determined by government?; is it feasible to factor all the needs of the learners given that the non-traditional component has got varied needs? Whilst the learners and the society are the ones that are affected by the learning outcomes, Wang *et al.* (2014) argue that absolute autonomy of learners in determining content in an institutional programme may not be feasible. This is because the fundamentals that learners must learn are determined by the institution and government. This is the situation in Zimbabwe where institutions in consultation with ZIMCHE come up with MBK. To this end, the applicability and impact of the andragogical model in content building is affected. This is because the subsequent learners who enrol for the programme become beneficiaries of needs that are not consistent with them. In the Zimbabwean context, institutional content is subject to review after about 4 or 5 years meaning that during this time there is prescribed curriculum.

Having indicated in the preceding paragraph, the competence gap with respect to factoring in all learner needs in an institutional programme, how then is this void compensated. According to Evans (2006), the void is compensated for by the pedagogical discourse. The implication is that unlike in developmental programmes where the content can be changed regularly depending on learner needs, the institutional model looks at learner needs consistent with the government educational discourse. In this regard, fundamentals are prioritized and will only be reviewed after some time. It therefore implies a less impacting role of andragogy in institutional program content development. Wang *et al.* (2014) argue that during the content building of an institutional programme, learner experience plays a minimal role. This is because if the subject is new to the learner, there is very little or nothing

that he/she can add. Bhatia (2013) and Chan (2010) assert that the educational discourse cuts across an array of disciplines and whatever the competences that an adult wants to gain, he or she may enrol for a particular programme that provides such competences. However, it should be noted that the adult enters a programme such as medicine or psychology on the backdrop that not all his needs within that field would be addressed. Southhard (2017) therefore argues that andragogy may be applicable to post-graduate learning and in the later years of undergraduate learning.

The impact of andragogy therefore becomes limited in view of the Educational Effectiveness Theory. This is because institutional learning cannot be conducted on ethno-philosophical lens where a society or a group of learners would decide to learn divorced from the national philosophy of education, yet the opposite might be true in developmental programmes. It is therefore the writer submission that to a certain extent learners are involved in the design of institutional programme curriculum to determine the MBK for a particular period of time. This therefore relegates the learner needs to universality which is however unrealistic. The MBK are not exhaustive as they would be in a developmental programme. This is probably the case in the Zimbabwean universities in which the content is arrived at through a process of needs analysis using a particular group of potential learners, the community and academics who may not be part of the educational process. The institutional curriculum can therefore be argued to be more pedagogical and impacts positively in as much as the teaching of fundamentals is concerned which may be consistent with developmental discourse probably in the first few years and would eventually become obsolete. It therefore shows that the way institutional content is built does not allow for adequate room for the implementation of the andragogical model in its totality. This therefore weakens the andragogical model in the curriculum development of institutional programmes, leaving the pedagogical model with an upper hand. However, this shows the frequently used model but it does not imply that it is the most effective model because the content may be divorced from the society. The bottom line remains that a model that reflects on the needs of the learners and the society in the curriculum would be the most ideal without necessarily having to prescribe the content.

Knowles *et al.* (2012) talk of the application of theory to the real world. Learning should not be all about theorisation and mindless idealism (Merriam, 2002). It should aim at addressing practical and real-world situations (Wankel & DeFillip, 2003). The real-world issues must be brought into the classroom through simulations, role plays, group discussions, field projects, skills practice, and case studies. The learning must be collaborative, experiential, transformative, experimental, investigative, and problem solving. These are the typical methodologies in andragogy and resonate well with   the thrust of higher education of dealing with reality and application to the

learners' lives. Chan (2010) adds that the methodologies must be complemented by conducive physical and psychological environment of mutual respect and reciprocity. This could be the one missing tenet in the Zimbabwean university education that breeds antagonism and reliving primary and secondary education leads to the detriment of the teaching learning process. In her research in Kennesaw State University, Thompson (2018) found out that straight lectures, rote learning, recitation, mere presentations, a culture of examinations and prescriptive learning in which the lecturer assumes the repository of knowledge contributed much to the academic excellence of students in terms of grades but lacked application to the real world. To this end, she concluded that the learning was progressively regressive in that it focused on the passing of students and theorization with very little application. In the context of Mlambo (2008) and Raftopoulos (2004), these pedagogical methodologies and pedagogical content have detached Zimbabwean institutional learning from the societal problems. Even in the era of Education 5.0, the philosophy has not been supported by the relevant models of learning, with the traditional classroom teaching-learning and assessments remaining dominant at the expense of industry and community situated learning and assessments.

It is therefore the submission of the writer that the andragogical methodologies become more impactful in institutional learning by virtue of bridging the gap between theory and real-life situations. They also act as compensatory to the more pedagogical curriculum through constructivism, constructionist, pragmatic, progressive, radicalism and humanness of the teaching-learning process. It needs to be acknowledged that principles and concepts are introduced through pedagogical methods such as straight lectures that is if the students are entering into a generally strange area. Progressively, depending on the competence of the facilitator, there should be a paradigm shift to andragogy to cement these principles through life applications and tapping into the students' experience. In this vein, Teodoro & Mesquita (2014) argue that the most critical consideration in the introduction of a programme is the exploration of multiple representations (graphical, verbal, analytical etc.) especially in subjects such as science and mathematics.

The overall submission of the writer is that institutional programme planning is more rooted in pedagogical content. This content is built from the environmental scan, the SWOT analysis and needs analysis and then qualified as relevant MBK through consultation with ZIMCHE. This process is more andragogical in nature but as the content is recurrently prescribed on the learners, it becomes pedagogical. It also needs to be taken into consideration that though it can be argued to be more andragogical, not all learner needs are captured despite being used on an array of non-traditional students. The process of needs analysis is to an extent determined by the national educational philosophy and developmental discourse such as attaining a middle-income economy by the year 2030. Tertiary institutions therefore use

prescriptive course outlines rather than having content peculiar to a non-traditional group. In the methodological context, the pedagogical methods of rote learning, straight lectures, presentations etc. as argued by Thompson (2018) impact more when new concepts are being introduced but their continued use would just aid in producing excellent passes in examinations. In fact, they will do very little in the overall educational impact which is then addressed by the andragogical methodologies that have got a nexus with real-life situations. These andragogical methodologies become compensatory to the prescriptive curriculum and also address the gap created by mere theorisation in pedagogy. This is because learners can bring value to their learning through independent interrogation of their individual and societal problems and bring them into the learning environment for the benefit of others.

The gap that exists in the methodological contexts is that pedagogy resonates well with the prescription of fundamentals, principles or new concepts. However, its continued application becomes progressively regressive as it impacts less on the effectiveness, efficiency and efficacy of learning as outlined by the Educational Effectiveness Theory and Holistic Education Concept. To this end, the humanness, learner centred and problem centred andragogical methodologies can then be argued to impact more as the learning progresses in institutional programmes. This brings to the fore the argument that the two models are not dichotomous but exist along a continuum of complementarity. However, the ineffectiveness of education systems in most countries, Zimbabwe included, could be because of the professoriate failing to articulate the best impacting moments of the two models from programme planning to evaluation. This implementation gap motivated the study to interrogate the role of the professoriate on the application of pedagogy and andragogy in institutional learning.

Fredua-Kwarteng & Ofosu (2018) in their study of Universities in West Africa observed that the effectiveness and efficiency of institutional programmes is dependent on the qualifications of lecturers, the degree programme requirements, a rigorous examination system and course content. They observed that there is very little that is paid to the teaching-learning process of adults. It is assumed without even a shred of evidence that lecturers by virtue of being experts in their disciplines would effectively and efficiently impact on the teaching learning process. Fredua-Kwarteng & Ofosu (2018) also noted that theories, abstracts and figures are literally thrown to the students in the classroom in what they have described as Straight Lectures. The lecturers are considered the sole actors and repository of knowledge without allowing for students' perspectives and critical thinking. They also argue that straight lecturers are a poor approach to prepare university students for employment. This is because the pedagogical straight lectures are non-collaborative, non-reflective, non-transformational and cognitively boxed. Over and above, the

approach does not facilitate the connection of students to their societies and economies which is the thrust of Education 5.0. This has been blamed as part of the causes of high unemployment of university graduates in African countries. According to Kanyongo (2005), the Zimbabwean situation is neither different nor better from the rest of Africa. He argues that students who graduate from universities and colleges lack the requisite skills to be employed. He therefore argues that the Nziramasanga Commission of inquiry sought to create a curriculum that focussed on employment related skills. In the context of Shizha & Kariwo (2012), Zimbabwean higher education requires to be indigenised so that it moves away from the colonial legacy to issues that are peculiar to the Zimbabwean society and the economy but also being considerate of the benefits of a globally appealing education system, thus heritage-based education and harnessing relevant technologies from across the globe. A convergence is drawn between Education 5.0 and the Nziramasanga Educational Paradigm. However, good as they may or might have been, the educational philosophies suffer from lack of an effective design and delivery model as has been seen by the continued use of straight lectures and other approaches that promote theoretical graduates.

The line of argument as postulated by Fredua-Kwarteng & Ofosu (2018), Kanyongo (2005) and Shizha & Kariwo (2012) extrapolates that generally African and Zimbabwean higher education systems are devoid of holistic learning models that connect the teaching-learning process with the society and economy. There is progressive-regressive education because of the continued use of primary and secondary education pedagogy up the ladder focusing mainly on perennial principles at the expense of progressivism, pragmatism constructivism and constructionism (Garuth, 2014). The authors argue that the most impacting model is one that promotes transfer learning. In this vein, the impact of pedagogy or andragogy as absolute models of higher education teaching and learning needs further interrogation so that a more holistic model can be adopted.

Dambudzo (2015) postulates that the effectiveness of university learning is determined by whether it promotes development or not. This is achieved through teaching that is problem based, collaborative, project driven, enquiry based, and one that promotes critical thinking. In the context of Brundiers & Redman (2010), classroom activities, the curriculum and the methodology must be linked to the realities of the world. There should be extension of the learning organisation to the learning community through Community Engagement (CE) (Kearney & Zuber-Skerrit, 2012). This should be complimented by technology, content and pedagogical knowledge. This implies varied methodologies and a curriculum that addresses the fundamental principles of subjects, and the learner needs as they relate to the industrial and societal discourse. There is also need for subject competence from the professoriate consistent with the societal and learner needs. The crux of university

institutional learning should be problem solving, employability, functionality, innovation, and industrialisation (Bidabadi *et al.*, 2016; Khali *et al.*, 2013; Ratiu & Anderson, 2014).

The general perception among most Zimbabweans is that the higher the qualification one attains, the higher the chances of attaining a good job and good life (Nherera, 2014). This is the reason why university education is valued in Zimbabwe. Society expects a lot from these institutions and the degree to which they satisfy the societal needs defines their relevance (Ubillus & Diaz, 2015). Raftopoulos (2009) in this regard argues that the Zimbabwean university education can be argued to be effective, efficient and relevant if its programmes address the demands and needs of the students, the society and the nation at large to better their lives. In the context of Nyerere (1967, p.382), "relevant university knowledge is that which fulfils students' real social needs, the needs of the community and the needs of the state and the world." It is in this context that university education in Zimbabwe has been accused of straying from the traditional purpose of problem solving (Raftopoulos, 2004; Mlambo, 2008; Maravanyika, 2005; Nyazema, 2010). Nyazema (2010, p.233) postulates that, "universities in Zimbabwe have failed to produce skilful people with specialised knowledge of problem-solving and the promotion of economic development." Waghid (2002a) blames the dysfunctionality of the Zimbabwean education system on the higher education policy or Strategic Educational Directives (SED) and institutional models of learning which are not accountable and answerable to the communities and the broader society.

In this regard, the government, the academics, the society, captains of industries, politicians, and the Zimbabwean generality need to conceptualise education that aims at social transformation rather than unilateral declaration of SED without stakeholder analysis and consultation. It is the submission of the writer that such collective approach to the policies, curriculum and models of learning can then make education a tool to address the current problems such as run-away inflation and abject poverty. The purpose of university education should not be to produce numbers of Doctors and Professors who cannot arrest the political, economic and social quagmire bedevilling the country. Therefore, the impact of pedagogy and andragogy in university learning should therefore be contextualised in their ability to address the above tenets. In this regard, SED in the form of the new curriculum and Education 5.0 are clear indicators that Zimbabwe is trying to come up with a learning paradigm that is holistic enough to address the above-mentioned variables.

Traditional university education was a preserve for the youth or young adults soon after graduating from high school. However, the world over, university education has seen the significant increase of the non-traditional component (Southard, 2017; Yoshimoto *et al.*, 2007). Zembere (2018) argues that university education in

Zimbabwe can effectively respond to the political, socio-economic, and environmental problems being faced by the country. She draws this argument from Dewey (1916)'s explanation that education creates a critical faculty so that a person articulates the complexities of the socio- economic and political environment. This does not merely happen because adults have attended university education. The university pedagogy or teaching-learning to which students are exposed can empower them to think critically, radically and practically or disempower them through silencing education or oppressing pedagogy. Therefore, higher education should be used as a platform in which the classroom environment is used to openly discuss the issues and challenges affecting developmentalism without fear of victimization. Zembere (2018) calls this Democratic Citizenship Education (DCE). This is supported by Waghid (2010a) cited in Zembere (2018) who argues that the teaching model in universities should advance democratic teaching learning processes. It should also promote the students' autonomy in thinking and participating in the design and delivery of instruction. The professoriate and students must actively participate in the teaching learning process as change agents (Subba, 2014).

According to Bangura (2017), much of what is conceptualized as adult learning in universities is the compulsory transmission of knowledge and culture under institutional environments. Bangura (2017) sees pedagogy as a model of learning that permeates the educational discourse including adult education. He therefore argues that pedagogy is problematic in educating African adults because it has got specific objectives derived outside the context of the societal needs. It does not provide an absolute model for learning of African phenomena. It is critical to highlight that in the context of Bangura (2017), pedagogy applies to both children and university adults and is probably effective in university learning given certain educational goals, settings, participants and content. However, he is quick to point out that the model cannot address every individual adult learner needs because the needs are not universal. Adults cannot solve individual problems from content designed by the university, faculty or teacher alone but they want to identify areas consistent with their learning agendas.

Contrastingly, Knudson (1980) argues that whilst pedagogy is a preserve for children and in certain contexts for adults, both pedagogy and andragogy should not be seen dichotomously but as existing along the spectrum of a continuum. In this regard, he argues that a more holistic approach would be Humanagogy which is basically pedagogy and andragogy combined. Humanagogy takes education as a matter of degree and not kind. It does not take away what educators already know about pedagogy and andragogy but put both into perspective, thus takes development of the whole being from birth to death (Holmes & Abington-Cooper, 2001). This line of argument is also supported by Oyeleke (2018) who argues that the concepts of

andragogy and pedagogy are intertwined giving a sliding scale from self-directed to teacher centred learning. He argues that some adults learn better in self-directed mode while others do better in the teacher centred mode. He argues that the two cannot be absolute models standing on their own but need complementarity for effective and efficient learning.

It is the submission of the writer that the impact of pedagogy and andragogy in Zimbabwean institutional programmes has been very minimal because of the failure to determine the extent of their complementarity. There could be a mismatch of contexts with regards the models in terms of the learners, the degree programme and timing etc. It is also the argument of the writer that whilst Knudson (1980) argues that humanagogy can be an absolute model of institutional learning, national policies may also play a pivotal role in circumventing the impact of pedagogy and andragogy. This according to Raftopoulos (2006) has affected the extent to which Zimbabwean higher education has been responsive to societal problems. It is also the submission of the writer that there have been more principles teaching without striking a balance between the need for practical solutions and mastery of subject matter.

Tanaka & Evers (1999) postulate that the impact of institutional learning is achieved through the implementation of Ergonagy. *Ergon* is a Greek word which means 'work' whilst *agogos* means 'to lead'. Therefore, university education should prepare graduates for work performance in occupational-vocational education and training. According to five (5) case studies conducted in Japan and the US on university education, all of them revealed that neither pedagogy nor andragogy can be an absolute model to address the teaching-learning process that leads to developmentalism (Tanaka & Evers, 1999). A combination of andragogy, pedagogy and ergonagy ensures that fundamental principles are taught, learning is work related and self-directed which is probably the missing link in Zimbabwean university education.

Heutagogy which basically means self-determined and transformative learning (Hase & Kenyon, 2000) is a model that incorporates pedagogy and andragogy in action learning. It is research-based learning, experiential learning, and collaborative learning that promotes environmental scanning. It is proactive learning rather than reactive problem solving. The aim is to produce graduates that are employable in their field consistent with global job market demands. Blaschke (2012) argues that heutagogy is net-centric implying the use of the internet as a technological self-directed resource centre. It is capability based rather than objective based and is on the extreme end of the pedagogy-andragogy-heutagogy (PAH) educational continuum. From the foregoing, the heutagogy model is more or less similar to humanagony, ergonagy and andragogy models. As alluded to earlier on, the missing link in the Zimbabwean context could be the extent to which pedagogy is being

applied at the expense of the other models because much of the professoriate is deeply entrenched in pedagogy.

Ubuntugogy is a model that transcends pedagogy, andragogy, heutagogy, ergonagy and humanagogy. It is the art and science of teaching and learning within the confines of humanity towards others (Bangura, 2017; Ganyi & Owan, 2016). The aim is to develop an adult who is cultured and operates within the dictates of the whole society as a collective entity. Morals are of paramount importance and anything that violates the moral fabric and peace of others is taboo (Ngonidzashe & Hapanyengwi-Chemhuru, 2014). The rationale behind this African epistemology as argued by Bangura (2017) is that universities in Africa have for long relied on the Western models causing Africa's underdevelopment, mal-development, civil conflicts and low literacy rates. In this regard, the models that are applied in African tertiary institutions do not resonate well with the philosophy of *Ubuntu* and how the African society should progress.

The discussion in the preceding paragraphs clearly shows that there is no absolute model of institutional learning between pedagogy and andragogy but a combination of over-arching models. However, the degree to which they impact on institutional programmes and in which contexts as individual entities need to be established. It can also be seen from the foregoing that the institutional model of learning, its effectiveness, efficiency and efficacy is not a Zimbabwean problem alone but probably in most African countries. It is also the submission of the writer that all the discussed models of learning might be in use in the Zimbabwean context but however being employed in the wrong contexts or being misinterpreted.

According to Tapera & Kuipa (2016), Higher Education Institutions (HEIs) represent centres of academic excellence. The industry and other stakeholders look forward to the production of quality graduates with relevant skills, knowledge and expertise to drive the industry. The graduates are also expected to develop cutting edge innovations, inventions and above all should match the global job market (Mohamedbhai, 2014). However, Tapera & Kuipa (2016) posit that research conducted on the quality of graduates from Kenya, Burundi, Rwanda and Uganda by the Inter-University Council for East Africa observed that 51% to 63% of the graduates from these countries do not meet the employers' expectations because of lack of relevant skills and competencies. This is the problem that affects the Zimbabwean HEIs as postulated by Mlambo (2008), Raftopolous (2006) and Nyazema (2010). However, the Zimbabwean government established a board to oversee the quality of university education called the Zimbabwe Council of Higher Education (ZIMCHE).

ZIMCHE was established in 2005 as a response to the rapid expansion and emergence of universities to which the public had complained that the institutions had lost quality nationally and internationally. The recommendation to look into the quality of university education came from the Nziramasanga Commission of 1999. This therefore obligates universities to meet certain benchmarks to remain viable in the national education discourse. ZIMCHE works hand in glove with the university quality assurance department and advises the government (Hwami, 2012). The areas of concern would include among others the quality of teaching, quality of research, quality of learning, quality of support services, institutional and programme accreditation. However, the Council has borne the brunt of interfering with university autonomy such as recommendations to include or remove certain degree programmes (Garwe, 2015). Coming up with MBK in consultation with relevant stakeholders is one of the duties of ZIMCHE. However, since its inception in 2005, it can be argued that the MBK have not been forthcoming and reflective of what the societies want. To this end, Raftopoulos (2010) observes that those better off in society have resorted to sending their children to outside universities where they think there is quality education.

It is the writer's submission that the pedagogical process of prescription that most policy makers, administrators and academics have been subjected to continue to take its toll on the determination of MBK. In this regard, SEDs are not consistent with what the society wants and expect from the university. The world over, the government through approved boards needs to determine whether the MBK are consistent with the national philosophy and national educational philosophy. However, the process in Zimbabwe seems be flawed, thus up to now the MBK are failing to address the national aspirations of developmentalism. The MBK are the fundamentals that need to be learnt in each and every discipline, but they are not an end to themselves but a means to an end. This is because they do not holistically attend to all the system, the school and classroom factors. ZIMCHE emphasizes that university students should be taught the concepts to address the MBK but does not emphasise on whether they are to be taught andragogically or pedagogically. However, it needs to be acknowledged that MBK are a prescription from the national government to the universities. Universities are not to deviate from the confines of the set MBK, and examinations are set on the basis of testing these. Therefore, this becomes pedagogy of adults and its failure to impact on the teaching learning process should partly be borne by the State because ZIMCHE would have failed to come up with relevant content for industrialization. However, it needs to be noted that the autonomy of the university and the necessary flexibility as postulated by Garwe (2015) needs to be observed so that the institution can add value to the MBK rather than religiously following them.

Bangura (2017) argues that needs are not universal and thus the MBK might not accommodate all the needs of the students. He is quick to mention that they are a monitoring tool for quality by the university and the government but need to be complimented beyond that. This brings to the fore the question; can higher education institutional programmes have impact on the learners and the national development discourse on the sole basis of following MBK or on the sole basis of advancing learner needs?

From the foregoing, MBK are necessary as the yardstick to measure the extent of knowledge gained. However, if all universities are guided by the same, why then do graduates from certain universities have better employment chances than those from others? It can tentatively be argued that the MBK cannot solely render university education effective and efficient. Therefore, societal needs and learner needs should be addressed to complement the MBK. This andragogical process resonates well with Garwe (2015)'s autonomy of universities. In this context, the university must complement the MBK through needs analysis at institutional level as well as varied methodologies. It is therefore the submission of the writer that Zimbabwean university education is impacting less on the society probably because the MBK are wrong from the onset leading to knowledge that is not consistent with the Zimbabwean industrial discourse being parcelled out. This brings the writer to Mutunhu (2011)'s critical assessment of the relevance of modernisation and the dependence theory in African development discourse as typical example of obsolete MBK. He concluded that though being continuously taught, the two theories are not relevant to Africa's development. In short, the SEDs do influence the adoption of learning models and how these subsequently impact on the teaching learning process. The discussion emanates from the recently promulgated Education 5.0 that seeks to address the skills gaps of Education 3.0 whose thrust is on teaching, research and community service. To this end, Professor Murwira suggests a model of learning which seeks to review the MBK and do away with programmes that create idle graduates without innovative skills. Education 5.0 seeks to research, teach, community serve, innovate and industrialise. In the context of Magaya (2019), the paradigm should be contextualized as remedy to the historical chronologies that have weakened Africa's education system. He argues that Africa missed the first industrial revolution because of slavery, the second industrial revolution because of colonialism, the third industrial revolution because of the liberation struggles and it should now participate in the fourth industrial revolution spearheaded by technology and innovation.

In his inaugural speech, Professor Murwira argued that science is the power that drives the industry. Development must not be bought but be created through Science, Technology, Engineering and Mathematics (STEM). The Education 5.0 paradigm is driven by a Heritage based philosophy such as in China, Japan and

Germany. Technology is drawn from all over the world to develop, innovate and industrialise Zimbabwe using the local resources in terms of people, science and the universities. As an example, if orange juice is produced from Europe because oranges grow naturally in Europe, Zimbabwe can as well produce *matamba* juice because *matamba* grow naturally in Zimbabwe. It is therefore the submission of the writer that this educational discourse seeks to address economic development. It seeks to place much emphasis on science development as the panacea to sustainable development. This therefore means that the thrust of universities is being channelled towards science education which is considered the crux of development.

Whilst the writer intends not to delve much into the implications of this new discourse on developmentalism, a synoptic conclusion is that it pursues functional development. It is concerned with the aggregation of goods and services (Hettne, 2008). It subscribes to Mainstream Development (MD) in that the focus is on economic development in line with the country's Vision 2030. However, it seems to be devoid of the fundamental tenets of developmentalism which are economic, human, political, cultural technological, environmental, and social growth. Development should not be premised on the quantitative growth of objects but the qualitative growth of people in relation to their community and environment that sustains them as means of removing all the un-freedoms and poverties (Todaro & Smith, 2015; Johan & Jespersen, 2016). Credit should however be given to the educational paradigm for trying to pursue endogenous, needs based and self-reliant development as expounded by the heritage-based philosophy. This is the Alternative Development (AD) discourse as advocated by Nerfin (1977) and Marx-Neef (1991).

In the context of education, it needs to be scrutinized whether Education 5.0 advances holistic education. Holistic education is education that focusses on completeness and avoids excluding any aspects of the human experience. Education should cultivate a relationship in the individual of aspects such as the intellectual, spiritual, emotional, physical, aesthetic and social. It also focusses on relations between the individual, society and the environment, the intrinsic-self of students and outside environment, reason and emotion, different levels of knowledge and how to know. It is not confined to fundamental skills but life experiences (Majethia & Patel, 2018). It is therefore the argument of the writer that Education 5.0 might not be holistic as it seeks to side-line the other discipline whose episteme, metaphysics, axiology and logic are equally important for developmentalism. As an example, one would then question whether the paradigm is insinuating that those studying History or those who do not fall within the confines of STEM are not relevant to developmentalism. If so, this therefore ultra-vies the concept of developmentalism that seeks to address all facets of development, be it human, social, cultural, economic, political or environmental. Education for development is not all about

the geospatial, aeronautical and space science, information-communication technology, energy and minerals research or biotechnology.

The writer also submits that the educational paradigm does not conform to the model of Ubuntugogy as propounded by Bangura (2017) in that it has drawn prescriptive parameters of education, defying other tenets of developmentalism within the confines of the Zimbabwean people. It can then be seen that this SED dictates what must be taught by universities but is this the best for the country? Does it not silence certain voices from the professoriate, the captains of industry, the community and students? This therefore has got a bearing on the effectiveness, efficiency and efficacy of institutional programmes.

Most adult learners were exposed to pedagogy from primary school to high school and were conditioned to believe that learning is teacher and subject centred. This experience demotivates some adults to attend higher education learning because they do not want to relive the experience. At the same time, some adults feel that the teaching-learning process should be done pedagogically, thus they seek the continuation of the status quo from high school (McGrath, 2009). In certain contexts, adults come to universities without prior background of certain disciplines such as accounting, law, medicine etc. In these circumstances McGrath (2009) argues that the lecturers would have to teach the fundamentals pedagogically. However, as the course progresses, the students would then be encouraged to apply the taught concepts to the field of practice, thus linking experience with the taught material. This is a move from teacher dependence to self-directedness and enriching the learning environment with experience and practicability. However, McGrath (2009) observes that in most institutions, students once introduced to pedagogy might not want to change, thus would want to remain dependent. This line of argument is typical of some students in Zimbabwean HEIs who have been conditioned to pedagogy to the extent that if the andragogical model is introduced, they argue that lecturers are lazy or that they are bad teachers. Knowles (1998, p.70) observes that, "pedagogical strategy is appropriate at least as a starting point, when learners are indeed dependent and when entering a totally strange content area."

In short, the pedagogical model is ideal at the beginning of courses but becomes detrimental when continued up the ladder. This therefore brings to the fore the contextual applicability and effectiveness of pedagogy and andragogy. Southard (2017) argues that the contextual applicability of pedagogy and andragogy should be seen in the perspective of whether students are undergraduates or postgraduates. It should also be seen in the context of the nature of discipline e.g. mathematics or sociology. He further argues that it would be appropriate and more impacting when pedagogy is introduced to cover fundamental concepts at undergraduate level whilst at postgraduate level, the most dominating model would be andragogy. This does not

mean that andragogy at undergraduate level is not applicable, but the dominating model would be pedagogy to give students the necessary grounding. This argument therefore shows that pedagogy or andragogy cannot stand as absolute models if they are to impact positively on the design and delivery of instruction in university institutional programmes. Pedagogy is not necessarily a preserve for children but adults as well and must be complemented with andragogy.

Whilst pedagogy and andragogy are models that can be implemented in university learning, those that implement them could determine the extent to which they become effective. Ward (2001) observes that a mediocre lecturer is good at telling, while a good teacher finds time to explain. He argues that the very good teacher emphasizes demonstrations while the superior teacher is one who inspires. It is therefore the superior teacher who can exhibit the connoisseurship of university teaching because he/she has got the subject matter competence and has the art and science of delivery.

Hiatt (1991) in his research on American universities showed that most of the colleges in the USA in the 1980s and 1990s still had a significant chunk of untrained professoriate. Kapur (2017) observed that the qualifications of university lecturers in India have got more to do with pedagogues dealing with pedantics. He argues that lecturer training has taken very little cognisance of the non-traditional students flocking universities. To this end, he observes that Indian universities notably Rajasthan, Madras, Sri-Venkateshwara, Garhwal and others have introduced lecturer training in andragogy for the purposes of facilitating non-traditional students. In the Russian Federation, universities have got colleges of andragogy to ensure that those that deal with adults have got an additional qualification of andragogy in addition to the pedagogical qualification (Yoon, 2009). Rule (2017) therefore argued that teaching at university level required that the professoriate acquire the requisite knowledge and skills in the teaching process. Schmidt (2008) argues that the professoriate does not necessarily need to focus on pedagogy training alone to impact on the teaching learning process. He argues that the lecturers should attend to university learning   the way they attend to their research implying experimentation, practicability, collaboration and attention to student experience. They should not focus on the content that they want the students to learn only but the development of cognitive and critical thinking skills (Berret, 2012).

The existence of lecturers who are not trained in either pedagogy or andragogy could be contributing to the ineffectiveness, inefficiency and inefficacy of university education in Zimbabwe. The systematic design of instruction from needs analysis up to implementation is a pre-requisite for all the teaching staff. As alluded to by Berret (2012), lecturers need to understand the process of how adults learn best and how the teaching-learning should be managed.

The study was informed by the e Educational Effectiveness Theory. The theory has got its early roots in the works of Brookover *et al.* (1979) in the USA. It is also rooted in the research work of Mortimore & Ouston (1979) in Britain. It is a holistic theory that measures the effectiveness of an educational system basing on the inputs of the education system, the processes, the contexts in which learning takes place and the subsequent outcomes which could be immediate or long term. In the context of Schreens (2015), educational effectiveness is a theory rooted in a combination of system level, classroom level and school level factors. The Society for Research on Educational Effectiveness (SREE) (2011) defines educational effectiveness as a theory that explains or provides direction on why, how, in what circumstances, for whom, education practices and policies would positively or negatively impact on the overall education outcome. The present research was informed by this theory because in determining the impact of andragogy or pedagogy, the focus is on the national philosophy of education and the curriculum which are represented by the system factors. The determination of learner needs by a particular institution, its policies, practices, its general orientations with regards pedagogical and andragogical paradigm can be summed up as the school factors. The methodological approaches that characterise institutional programmes in higher education, the student-teacher relations, the environment and the audio-visuals are characteristic of the classroom factors.

The Educational Effectiveness Theory is a theory that does not focus on the academic achievements of learners alone but goes beyond the classroom. It focuses on the classroom cognitive, behavioural, constructivism, constructionist, and Gagnes Learning Theory aspects. The humanness of the classroom environment and the facilitators' role augers well with the Cybernetic Theory of Learning. Thus, the Cybernetic view and Humanist Theory of Learning are the other constructs of the theory.

In the broader context, education would then be deemed effective and functional if it produces man who is not only in the world but with the world, which is to mean learners who are responsive to the world social order (Nyerere, 1968). In the same vein, Freire (1974) argues that education should radically transform society and should not produce conformists and docile graduates whom he described as products of Silencing Education. It therefore follows that we cannot talk of educational effectiveness or the impact of pedagogy and andragogy without considering Freire (1974)'s Critical theory or Reconstructionism as derived from the Frankfurt School. Educational Effectiveness Theory is also supported by Dewey (1941)'s pragmatism and progressivism. In the context of Dewey (1941), education would be dysfunctional if it restricts learners from producing the best out of themselves.

Learning should have practical implications and should not constitute empty idealism (Elias & Merriam, 2002; Saleh, 2013).

Beyond the institutional horizons, educational effectiveness to a larger extend is informed by the national policies, the strategic guidelines or the system dictates. The migration along the education continuum from Education 3.0 to Education 5.0 is one strategic narrative that would then influence the functionality of the Zimbabwean education system. It is a national policy which would then inform pedagogical and andragogical orientations of institutions, lecturers and students. In short, the success of developmental or institutional programmes would be to a greater extend be determined by the national education philosophy. This philosophy would then inform the curriculum, the methodologies, the purpose or aims of education, the role of the learner and that of the facilitator. It is important to highlight that the impact of both pedagogy and andragogy falls within the confines of the national philosophy down to the classroom factors. This means that the impact of pedagogy and andragogy in institutional programmes should be looked at holistically considering the Educational Effectiveness Theory from the system factors to the classroom factors.

This chapter focused on the review of related literature with a strong bias to issues of educational effectiveness, efficiency and efficacy as driven from the theoretical framework. The research questions provided themes to guide the review of the literature. The chapter provided a synoptic review of curriculum development and methodologies in pedagogy and andragogy. It focused on tenets of educational effectiveness, efficiency and efficacy in university learning with a bias on what would be deemed the connoisseurship of university learning. The possibilities of an absolute model of institutional learning, the dilemma of satisfying MBK and learner needs, the perceptions of lecturers and students on the impact of pedagogy and andragogy on university learning were also looked at. The review looked at the contribution of trained and untrained lecturers on the effectiveness and efficiency of university education within the realm of employing pedagogy and andragogy in a complementary continuum. It also looked at the theory underlying the study. The next chapter focusses on research methodology.

CHAPTER 3:
Approaching the Study and its Design

This chapter articulates the research methodology followed in the conduct of the study. The focus is on the adopted research philosophy, the approach, the paradigm, the research design as informed by the paradigm, the population, the sample and sampling procedures used. It also discusses the research instruments used, data generation and triangulation techniques as well as data analysis procedures. The chapter also looks at the trustworthiness of the research process as well as the ethical considerations that guided the study.

Pragmatism as a research philosophy argues that there can be single or multiple realities that are subject to empirical inquiry (Creswell & Clark, 2011). Pragmatist scholars accept that there is an objective reality that exists which is different from human experience. This reality is generated through the quantitative world view but can only be encountered through human experience (Tashakkori & Teddlie, 2008; Morgan, 2014a). In pragmatism, knowledge and reality are based on habits and beliefs which are socially constructed. Reality is normative and can never be determined once and for all, thus a lecturer or a student might have a perception of andragogy and pedagogy which is different from another lecturer or student in the same faculty or university. In short, the pragmatist researcher believes that the nature of reality can never be separated from human experience and needs. Reality and meaning are contextual. The philosophy informed the study in that the worldview of the professoriate and that of the students varied on the impact of pedagogy and andragogy in different contexts.

The study adopted the Mixed Methods Research (MMR) approach or the abductive approach that involves the integration of quantitative (deductive) and qualitative (inductive) data collection and analysis to effectively address the research problem (Plano Clark & Ivankova, 2016). In investigating the impact of pedagogy and andragogy in institutional programmes, the researcher sought to capitalise on the strengths of the two approaches so that the phenomenon would be investigated from two different world views. The researcher sought to tap into the naturalistic approach of qualitative research of human realities rather than the mere realities of objects of quantitative research. Whilst the research could have been done solely through the hypothetical inquiry into numbers of lecturers and students of UZ within the confines of positivism, the writer realised that the impact could not be solely verified by hypothesising and observing phenomena. It also required the determination through the values, beliefs, understandings, reasons and knowledge constructed as the researcher interacted with the participants. In the context of theory building, the writer felt that it was too restrictive to confirm or reject

existing theories but to allow for the study to build theories consistent with how reality is construed by those involved with the phenomenon. This allowed the researcher to look at multiple realities which in the context of positivism would have seemed to be divorced from the study. This is seen from among other things by the models of adult learning that were discussed in the literature review.

The other rationale for adopting the mixed method approach was the quest by the researcher to generate data and theories from the post-positivism subject for confirmation or rejection by positivism. This approach resonates well with the complimentary thesis discourse of mixed methods that sought to extrapolate the strengths of the two combined in a bid to ensure the trustworthiness of the whole process (Greene, 2007). The choice of the approach was also influenced by the dialectical thesis of mixed methods in that the researcher sought to unearth the predispositions, respondents understanding, the beliefs, values with regards pedagogy and andragogy. One other argument of adopting the approach was to be realistic, pragmatic and constructionist and not to remain theoretical in the study of the phenomenon. The researcher also realised that the impact of pedagogy and andragogy could not be determined by merely seeing from outside but required an interpretivist philosophical lens of understanding it from within. This means that meaning and comparative impact was constructed from the different respondents and participants as derived from their day-to-day educational experiences.

In short, due consideration was taken on participants perceptions, assumptions, beliefs, and the nature of truth and reality. The variations in the epistemological and ontological assumptions helped to blend the research to minimise on the aspect of research bias. This blend of epistemological, ontological and methodological assumptions provided the basis for the adoption of the correct research design, data collection methods, data collection instruments and data analysis techniques appealing to both positivism and post-positivism. The complimentary nature of ontological assumptions from both quantitative and qualitative research allowed the researcher to understand pedagogy and andragogy in the context of objectivity, subjectivity and naturalism. The epistemological assumptions generated the academic institutional realities of the phenomenon under study. Yin (2011) argues that phenomenology is a qualitative philosophical lens that seeks to generate knowledge about a phenomenon based on conscious experience of research participants. This complimented the deductive philosophy of quantitative research to generate text and statistical data about the impact of pedagogy and andragogy.

According to Yin (2011), a research design is a grand plan that focuses on the questions to be studied, the nature of data to be collected and how the results should be analysed. It is a grand plan that enhances the overall research's trustworthiness, or its validity and reliability. Research designs may be many at the

researcher's disposal depending on the adopted research approach. These include the core mixed methods designs (convergent, exploratory and explanatory). Walker & Baxter (2019) argue about sequential and non-sequential designs in the mixed methods paradigm being an amplification to the convergent, exploratory and explanatory designs.

Creswell & Plano Clark (2018) argue that the approaches to classifying designs in mixed methods are premised on dominance and sequencing. Sequence relates to the methodological order whether they are implemented sequentially one after the other or simultaneously (Morgan, 2013). Dominance relates to which method is more central to the research and for which emphasis is greater than the other (Creswell & Plano Clark, 2011). In the MMR, Ivankova & Plano Clark (2018) argue that the quantitative strand has been seen to be the most dominating in most researches. Walter & Baxter (2019) feel that combining quantitative and qualitative is tantamount to having the latter providing narrative examples of conclusions already reached by the quantitative strand. This nature of research results in a qualitative—light study which does not address what it is aimed to address (Teddlie & Tashakkori, 2012). However, the dominance of quantitative research is not universal. Creswell & Plano Clark (2011) argue that the qualitative strand can as well dominate the quantitative strand. Zhang & Hanson (2015) in support argue that from the mixed researches conducted in the USA from 2003 to 2014, 86% preferred qualitative dominance. The dominance of the qualitative approach in this study is reflected by the adoption of research questions instead of objectives and hypothesis. The importance of the quali-quanti sequencing ensured that the researcher got an in-depth understanding of the perceptions held by the professoriate and students with regards to the impact of pedagogy versus andragogy using qualitative approach. After obtaining the in-depth understanding, it was then necessary to confirm or reject the views through quantitative strand. Using the criteria developed by Creswell & Plano Clark (2018), Holstein (2014) and Creamer (2018), the mixed method design is premised on sequencing and non-sequencing of methodologies. The designs are explanatory sequential, exploratory sequential for the sequencing approach and the convergent, and fully integrated for non-sequencing approach.

In some cases, when the qualitative strand is then followed by the quantitative strand, the qualitative approach would then act as a pre-study to the quantitative strand (Glaser & Holton, 2007). According to Creswell & Plano Clark (2018), this is called the Exploratory Sequential Design. Generally, the exploratory design provides familiarity of pertinent issues underlying the phenomenon and a well guided picture. It allows for the generation of tentative theories, models and hypotheses and addresses all questions including the why which is not addressed in the descriptive design (Creswell & Plano Clark, 2011). In this vein, the researcher sought to understand pedagogy and andragogy in institutional programmes and come up with

a holistic theory as informed by the Grounded Theory of Glassier & Strauss (1967) cited in Southward (2017). The Exploratory Sequential was necessary to confirm the validity and reliability of the qualitative results by quantitative means (Hesse-Biber, 2016). When employed, the qualitative methods would be used to shape the quantitative methods that follow (Harrison & Reilly, 2011). As an example, if in-depth interviews using the semi structured interview guide are used, it would be unnecessary to use an open-ended questionnaire but rather a close ended questionnaire or a combination of open and close-ended questionnaire. By virtue of the desire to obtain a thick description of the impact of pedagogy and andragogy consistent with the educational effectiveness theory, this design greatly informed this research with the qualitative strand assuming dominance over the quantitative strand.

A case study of UZ was adopted rather than a sweeping statistical survey to narrow down the scope of the study into a researchable entity. This approach is suitable when a theory or model is to be tested as to whether it applies or does not apply in particular contexts so that the findings could be inferred to the general population (Tobi & Kampen, 2017). The researcher therefore wanted to ascertain the applicability and impact of pedagogy and andragogy in institutional programmes. By so doing, the case study brought the researcher to an understanding of the two models as they relate to institutional programmes. It also gave the researcher the leeway to adopt a variety of data collection methods and also to tap from the experience of other researchers. In the context of the University of Southern California Libraries (2016), the case study design allows researchers to examine contemporary issues to provide the basis for the application of models, theories and concepts. This was the thrust of the researcher to examine the two models and relate them to institutional programming.

The descriptive design seeks to answer questions such as who, what, when as well as how associated with the phenomenon under investigation. It seeks to bring to the fore what exists with respect to a phenomenon. The 'who, what, when, and how' are questions that sought to be answered in the process of designing and delivery of the teaching-learning process in both pedagogy and andragogy. This allows the phenomenon to be studied in its natural environment and can be used as a precursor to more quantitative research designs. In this regard, the writer generated data through the case study and descriptive designs that formed the basis for the administration of questionnaires to lecturers and students in a pro-quantitative design.

The researcher also adopted the Phenomenological Design. Phenomenology is a research perspective or a philosophical movement within the qualitative paradigm which emphasises the study of conscious experiences as described by Edmund

Huseerl in the early 20th century (Creswell, 2007; Maree, 2010). It advocates for data collection and analysis premised on qualitative methodologies. However, Leedy & Ormrod (2005) explain phenomenology in the context of a research design which seeks to understand people`s perspectives and perceptions with regards a particular situation or discourse. According to Frost (2010), phenomenology is considered the most effective design when the researcher seeks to gain clear and first-hand information about a particular phenomenon without assumptions.

The researcher adopted this design because it enabled the respondents to reveal and give an insight into complexities of the applicability of pedagogy and andragogy as absolute models in the institutional environment. The experiences of the professoriate and the non-traditional students in the realm of adult learning in institutional programmes generated much data that could not be obtained through quantitative approach or at face value. The phenomenological design enabled the researcher to identify and distinguish participants' rules, norms and the reality associated with the application and impact of pedagogy and andragogy. In this regard, the researcher identified the ideal situation with regards application of the models and juxtaposed it with the realities or the norms or educational cultures that were developed overtime whether to the detriment or to the betterment of educational effectiveness. The Phenomenological design as postulated by Maree (2010) is flexible but this flexibility to a certain extent could be a disadvantage to inexperienced researchers who may then lose focus. This renders Phenomenological researches to criticism with regards to generalizability and credibility because of lack of defined procedures (Frost, 2010). Nutbeam (2006) also notes that Phenomenological design generates data that is difficult to make quantitative predictions. However, in the context of the study, the researcher sought more of first hand and experiential perspectives on andragogy and pedagogy rather than the quantification of participants who concur or disagree to a particular hypothesis. To this end, the researcher adopted more qualitative data collection methods.

In summary, the researcher adopted the integrated research design that combined the exploratory sequential design, case study design, descriptive and phenomenological designs. The use of multi-methodical research strategies is aimed at introducing a variety of ways of perceiving and interpreting a phenomenon under study (Flick, 2009). The use of the four designs helped the researcher to appreciate the impact of assumptions and limitations and how the methodological triangulation could circumvent the limitations. The researcher managed to have a four-dimensional insight and have an illumination of the complexity of the phenomenon under study for analysis. Frost (2010) observes that having more than one design offers the researcher an in-depth dimensional insight of the social world. In this study, the researcher managed to capitalise on the use of the four designs to view the complexity of the application of pedagogy and andragogy as absolute models for

institutional learning. The impact of pedagogy and andragogy in the context of academic success and beyond the institution were extrapolated through the four-dimensional lens. However, Newman (2000) observes that the use of multi-design research strategy or integrated research strategy may be difficulty because of the time required in sample selection. To this end, the researcher may end up losing focus if not carefully planned. To circumvent this, the researcher had to carefully plan the procedures and data generation instruments, analysis and interpretation of all participants` expressions, lived experiences and opinions on the applicability and impact of the two models.

The Grounded Theory developed by Glaser & Strauss (1967) is an approach that seeks to generate new theories from the quantitative and qualitative data gleaned in the research process. It can be used in all the research paradigms, the mixed paradigm included (Walsh, 2015). It is appropriate when a theory must be developed to help others to understand the phenomenon from the lived experiences of others (Corbin & Strauss, 2008). The researcher used The Grounded Theory to develop a model from the experience of the professoriate, the administrators and the students with regards adult learning in institutional settings. Using the Grounded Theory, data that was gathered led to the development of a more holistic model of institutional adult learning. It also could lead to the improvement of the system, school and classroom factors. It also could lead to the improvement of the competences of the professoriate dealing with the non-traditional component of university learning. The combination of quantitative and quantitative research designs and data collection methods resonates well with the concept of grounded theory that emphasises getting more information about a phenomenon so that whatever theory that is developed is in sync with what is there or the reality.

Data was collected through in-depth interviews and through questionnaires. The researcher could not observe the participants' feelings, attitudes, opinions and this necessitated the semi structured interview. The semi-structured interview is more flexible than the structured interview. It allows for unanticipated responses, issues and opinions through the use of open-ended questions (Coughlan, 2009; Mohammad, 2013). It also allows a follow up of issues raised by the interviewee in a spontaneous process. The wording of questions is flexible and provides for multi-lingual conversation and clarification with the respondents (Berg, 2009). Data is generated from questions on an interview guide with a high possibility of a single question generating a number of issues. This data collection method and instrumentation was used by the researcher to generate much of the textual data as it allowed the researcher to explore and tap into the realities of pedagogy and andragogy from the perspectives of the professoriate and the non-traditional students.

Fraser & Killen (2005) cited in <mark>Southard (2017)</mark> define a questionnaire as a list of pertinent questions meant for statistical inquiry. There are three types of questionnaires which are the close ended (structured), open ended (unstructured) and a combination of open ended and close ended questionnaires (Mohammad, 2013). Close ended questions provide numerical or statistical data while the open-ended questionnaires provide a combination of statistical and text data. Using the Exploratory Design of mixed methods research, the researcher opted for the combined questionnaire to generate more of statistical than qualitative data so that there is a qualitative-quantitative connection in the process of theory generation consistent with the Grounded Theory. In this regard some of the textual data generated by the interviews were confirmed and as well as disapproved by the statistical data in the quali-quanti strand. In the same vein, statistical data on perceptions and opinions on the impact of pedagogy and andragogy were also confirmed or disapproved by the textual data generated through the phenomenological inquiry. One of the reasons why the researcher opted for the combined questionnaire is that it leads to more discovery as compared to the close ended questionnaire. In this vein, Gillham (2014) argues that close ended questionnaires do not lead to much discovery, thus researchers can offset this weakness through a combined questionnaire or triangulating the close ended with in-depth interviews. The researcher in this mixed approach had to employ qualitative phenomenological inquiry in the form of in-depth interviews to offset the weaknesses of the combined questionnaire. One of the reasons why the questionnaire was used as a data collection method in this research resonates well with Fraser and Killen (2005)'s assertion that when respondents are out of sight of the researcher, they become free to express themselves. In this regard, the students expressed their opinions on the level of connoisseurship of the professoriate to the detriment of the impact of pedagogy and andragogy in the teaching-learning process.

According to Kabir (2016), a study population is the total number of items, organisms or people about which information is required. In the context of Mahanya (2016), it is a group of people, items or organisms that have got one or more common characteristics. It is the total and specified aggregation of the elements under study from which the researcher will draw conclusions (Frost, 2010; Shumba *et al.*, 2006). Asiamah *et al.* (2017) posit that whilst most researchers only talk of one type of population, the research populations are the General population, the Target population and the Accessible population. The General population includes all the participants of the research who must possess at least one common characteristic (Banerjee & Chaudhury, 2010; Pernecky, 2016). The General population of this study as derived from the research problem and the topic itself encompassed all the lecturers and students in institutions of higher learning in Zimbabwe from colleges to universities. Therefore, the researcher had the obligation to conduct a comparative analysis on the impact of pedagogy and andragogy in all these institutions.

The Target population is the number of participants who are left in the population after those that may controvert or may dilute the quality of the research have been removed (Bakarada, 2014). As an example, in this research not all the lecturers possessed the experience and expertise to articulate the concept of pedagogy and andragogy. This may be because of their field of study or Faculties to which they belong. Despite professoriate being the common characteristic, some were eliminated on the basis of experience or field of study that might have a bias towards a particular model whether andragogy or pedagogy.

The Accessible population which is the refined population from the target population consists of people who have the relevant attributes for the research and by virtue of their location or commitment are accessible by the researcher (Baškarada, 2014). It is the submission of the writer therefore that Accessible population is the same as what Kabir (2016) referred to as Sampled population or survey population because like the accessible population, the latter is derived from the Target population. Whilst it would have been ideal to visit the professoriate at all the colleges and universities, it was not possible, thus some of these lecturers became inaccessible to remain with the accessible population, those from UZ. The diagram overleaf illustrates the explanation from the General population to the Accessible population.
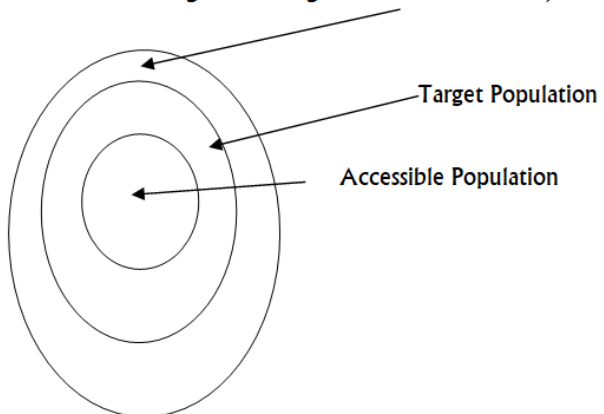
Fig 3.1 General, target and accessible population *(Researcher)*

Whilst the above explanation and diagrammatic representation insinuates that the population from which the sample was driven is the Accessible population, it needs to be indicated that the results from the sample were inferred to the whole

population which in this case encompasses all the institutions of higher learning in Zimbabwe.

A sample is part of the population that represents the characteristics of a population (Kabir, 2016). It is a subject of the population that is representative of the entire population. The important word in the definition is representative. Muchengetwa & Chakuchichi (2010) assert that the lesser the number of participants the easier it becomes to manage. Newman (2000) in Mahanya (2016) argues that if not well sampled, the sample can lead to biased or unrealistic results. The sample size for the quantitative strand was fifteen respondents (n=80) while for the qualitative strand was nine participants (n=10). With these sample sizes, it is the submission of the researcher that they were representative of the professoriate, the traditional and non-traditional students under study. To this end, the opinions, perceptions and the lived experiences of the impact of pedagogy and andragogy in institutional programmes as well as the suggestions for a holistic model were brought to the fore.

In order to get a sample out of a population, there are sampling techniques or procedures that must be employed. Sampling procedures are the techniques that contribute to validity and reliability of the research. Oliver (2004) and Handwerker (2001) cited in Mahanya (2016) argue that there are two types of sampling techniques which are the probability and non-probability sampling. In probability sampling, there is randomization and all the participants in a population have got an equal chance of being selected (Creswell & Plano Clark, 2011). Palys (2008) posit that the non-probability sampling technique is concerned with looking for individuals who satisfy a certain criterion.—It needs to be acknowledged that in as much as the probability and non-probability sampling techniques apply to quantitative and qualitative research respectively, there are also sampling techniques that are peculiar to the mixed method paradigm. In this regard, Teddlie & Tashakkori (2012) suggested a typology of sampling techniques that is peculiar to the mixed method paradigm in the form of the Basic Sampling, Sequential Sampling, Parallel Sampling, Multi-mixed Method Sampling and Multi-level Sampling.

The Sequential mixed method sampling is when the random probability sampling for quantitative strand is then followed by the purposive sampling for qualitative. It can either be quali-quant or quant-quali consistent with the Exploratory and Explanatory design. Informed by the adopted sequential exploratory design, the study used the exploratory sequential sampling in which the qualitative sample was first drawn through purposive sampling to obtain data rich participants by virtue of experience and appointments in the faculty. These provided a thick description of the phenomenon from their lived educational experiences as administrators, educators and as learners in institutional setting. This was consistent with the adopted Sequential Exploratory design which sought to generate an in-depth understanding

of the impact of pedagogy and andragogy and the generation of a holistic model for confirmation or rejection through quantitative means. It was then followed by the randomisation of the quantitative sample using the following formula:

$$\text{Sample size, } n = N * \frac{\frac{Z^2 * p * (1-p)}{e^2}}{[N - 1 + \frac{Z^2 * p * (1-p)}{e^2}]}$$

Where:

N = Population size; In this case 100 being a constituent of lecturers, Masters and Undergraduate Students from UZ faculty of Education;

Z = Critical value of the normal distribution at the required confidence level (critical value at 95% confidence level is 1.96.);

p = Sample proportion (0.5 because no previous studies were purely qualitative); and

e = Margin of error (5% or 0,05).

Therefore   n= 100[3.8416X0.5(0.5)/0.0025

                         (99) +3.841X 0.5(0.5)/0.0025

           n= 100[(384.16)/ (99+384.16)]

           n= 38416/483.16

           n=79.51

             =80

After the purposive sample, the researcher randomized the lecturers and students from the Faculty of Education to gain a statistical perspective and opinion on the impact of both pedagogy and andragogy from their lived experiences as learners, educators and administrators in their respective professions. The students provided their perception of the professoriate and its contribution to the effectiveness or ineffectiveness of the two models. Consistent with the Sequential Exploratory design, the results from the randomized sample were juxtaposed against the phenomenological text results from the qualitative strand. This was done to confirm, reject, and streamline the integrated data as well as developing a holistic theoretical perspective of the connoisseurship of teaching-learning in institutional programmes. Haradhan (2017) observes that validity is the degree to which an instrument, sample or method measures what is supposed to measure while reliability is the degree of consistency of an instrument, sample or method in measuring an attribute in research. Reliability is concerned with the stability of findings, while validity relates to the truthfulness of findings. They increase transparency, and reduce researcher bias (Singh, 2014). An alarm clock that rings at 7:00 each morning, but is set for 6:30 is very reliable and consistent but is not valid because it is not ringing at the time for

which it was set to ring. The two terms are applicable to the positivist paradigm to explain the trustworthiness of the research process. Therefore, positivists argue that reliability and validity are not addressed in post-positivism. Lincoln & Guba (1985) argue that in qualitative research, validity and reliability are addressed through four constructs which are credibility (in preference to internal validity), transferability (in preference to external validity or generalisability), dependability (in preference to reliability) and confirmability (in preference to objectivity).

The dominance of the qualitative strand in the research meant that much of the data was generated through qualitative research instruments in the form of semi-structured interviews. Therefore, the trustworthiness of the research was mainly assessed on the basis of Lincoln & Guba (1985)'s qualitative constructs of credibility, transferability, dependability and confirmability. However, consideration was also made on the quantitative aspects of content validity and utility criterion.

Merriam (1998) argues that the equivalence of internal validity is credibility which is concerned with the congruency of the findings to reality. In the context of Bloomberg & Volpe (2008), credibility of research or procedural validity is concerned with how congruent is the logic of the methods to the research questions and the answers that the researcher is seeking. In this regard, methods and instruments must measure what the research question seeks to get. In the randomised sample of the quantitative strand, the threats to credibility arose because of the researcher failing to have control over the research participants because uncooperative and inexperienced respondents were also issued with questionnaires. This happened even though the respondents had provided informed consent to participate. However, these threats were circumvented by the dominance of the purposive sample over the randomised sample. In this vein, credibility was ensured through inter-paradigmatic triangulation of interviews with the open-close ended questionnaires. This ensured that errors in one approach would be addressed by methods and instruments from another approach. This ensured that the data gathered was consistent with the research questions making it credible or internally valid.

The above relates to methodological triangulation but the researcher also triangulated the participants, drawing data from the lecturers and students and checking particular themes or lines of thinking whether there was coherence or discord. There was also iterative questioning during the semi-structured interviewing to check for consistence in respondents. During data analysis, there was member checking to ensure the credibility of the researcher's recordings. According to Curtin & Fossey (2007), member checking is the process of going back to participants to check if what they would have said is consistent with what the researcher would have recorded.

Transferability or generalizability is the process of coming to broad conclusions from specific instances, thus making inferences of things that were not observed basing on what was observed (Polit & Beck, 2010). One problem associated with grounded theory and the qualitative strand is that it is uncommon and not proper to make inferences to a broader population using a single case. In order to circumvent this, the researcher gave a thick description of the participants and the contexts in which the research took place. The participants were the professoriate, the students both traditional and non-traditional who in all sundry and purpose share more or less similar characteristics across institutions such as being subjected or subjecting students to either pedagogy or andragogy. The research took place in a teaching-learning environment; thus, the results can therefore be transferred to any other teaching learning environment in higher education institutions. Generalisability was also achieved through analysis of the data to check if the responses were typical or atypical of the lived experiences of the respondents. This is because respondents tend to artificialise the phenomenon whenever they realise that they are being recorded. It is also important to highlight at this juncture that the triangulation of purposive and simple random sampling was meant to ensure that the problems of generalizability in qualitative sample would be compensated by the representativeness of the randomised sample.

There is a close link between credibility and dependability in that a demonstration of credibility goes a long way in ensuring dependability (Bloomberg & Volpe, 2008; Lincoln & Guba, 1998). Dependability or external/internal reliability means that if the investigation is to be re-conducted by a different researcher, using the same methodology, research design, data collection instruments and the same participants, the same results will be achieved. Dependability was ensured through employing overlapping data collection methods to cater for shortcomings of others.

The ability of the research process to accurately express the perceptions of the respondents without subjecting the information to bias is called confirmability (Smyth, 2012). In this research, confirmability was achieved through bracketing in the conduct of in-depth interviews. This is to say the researcher detached his feelings, perceptions and biases and his characteristics with respect to pedagogy and andragogy. Confirmability was also achieved through triangulation of the research designs and data collection methods. In this regard, it is the submission of the writer that the procedures followed in the research can be followed by any other researcher in an audit trail and would reach the same conclusions thereby making the research credible.

Content validity looks at whether the instrument used in quantitative research was able to capture all the details that it was designed to cover. The researcher used the

close-open ended questionnaire which had the limitation of gaining a thick description of the phenomenon as derived from the lived experiences of the professoriate and the students. In short, whilst opinions and perceptions could be obtained through this instrument, detailed explanations of the phenomenon could not be obtained. In order to counter this drawback, the in-depth interviews were used in a process of methodological and instrumental triangulation in which the non-verbal cues and the expressions helped a lot in bringing to the fore the participants concern over the implementation of pedagogy and andragogy.

Lynch (1996) cited in Mohammad (2013) asserts that utility is the degree of usefulness of the research findings to the managers, administrators and other stakeholders. It seeks to ascertain whether the research is useful or works as intended. The criterion seeks to derive from the research evaluation whether the information produced aids or improves the effectiveness of programmes or systems. In the context of this research, the contextual applicability of pedagogy and andragogy in institutional programmes as well as the proposed holistic model of learning are some of the information that asserts the usefulness of the research to educators, administrators and students.

Ethics is a branch of philosophy that guides people on acceptable and unacceptable behaviour (Shah, 2011; Akaranga & Ongonga, 2013). Research ethics seek researchers to protect the research participants and abide by the norms and values of the research community (Fouka & Mantzorou, 2011). The two dominant philosophical approaches to research ethics are teleology and deontology (Blumberg *et al.*, 2005). The teleological view holds that unethical conduct can be justified by the benefits that the research brings. In this regard, this view argues that a researcher can unethically conduct research as long as the benefits outweigh the effect. The implication is that the benefits of the research findings could be weighed against the costs of acting unethically and if the costs are low then it becomes justified to act unethically. (Frankena, 2001). The deontological philosophy which is completely opposite states that no amount of research benefit can justify unethical behaviour. The researcher was therefore guided by the deontological construct.

Fouka & Mantzorou (2011) posit that informed consent is when a person knowingly and intelligently and voluntarily provides his consent to participate in research without any form of manipulation. This can only happen when the purpose of the research, associated risks, benefits and assurance of confidentiality and privacy of respondents/participants have been explained to the individuals (Akaranga & Mukau, 2016). In this research, the respondents/participants were advised of the purpose of the research and assurance was given as to their confidentiality and anonymity. The majority of the respondents were students whose contribution to the research attacked the persons and professional conduct of the professoriate. In

this regard, respondents were named alphabetically so that their verbatim contributions would not be attributed to them.

Beneficence relates to the aspect of research being beneficial while non-maleficence focuses on avoiding harm. In this research, the researcher avoided questions that would have caused emotional harm such as denigrating the models thereby affecting the esteem and confidence of those that strongly subscribe to them. In this regard, the researcher used the concept of bracketing so that he was not emotionally attached to the questions.

Confidentiality is when the identity of individuals is withheld so that it is not linked to the information that they would have provided (Polit & Hungler, 1999). It means that information that individuals would have divulged is not made public or made available to others. Anonymity of a person or institution is made possible by making it difficult to link provided data to either a person or an institution. In this research anonymity and confidentiality were guaranteed through ensuring that the names of the participants were not used to identify the data. A promise and assurance of anonymity and confidentiality was given to all the respondents/participants prior to the soliciting of data. Participants were identified alphabetically rather than by their names.

The researcher explained to the participants the value of their participation in the research project without jeopardizing their confidentiality and privacy. Therefore, the participants consented out of their own volition without cohesion. In the case that the participants felt they wanted to withdraw from the research process, they were allowed without any negative consequences there of (Holloway & Wheeler, 1996).

Privacy means that the participants could exhibit any behaviour or thoughts without interference or without these being used to demean or discredit them later. In this research, privacy was guaranteed through ensuring that sentiments about the pedagogical or andragogical practice whether bad or good remained confined to the researcher and the participants. The behaviours exhibited by the participants during the research also remained solely the knowledge of the researcher and the participants.

According to Akaranga & Mukau (2016), academics must be open minded and should share their information and ideas freely without fear or intimidation. This ethic guided the researcher to disclose the purpose, benefits of the research and promised to avail the research findings to UZ and the participants upon marking and correction of the thesis by the relevant authorities.

The faking of data, inventing data or results or having a predetermined finding is research fabrication. The omission or deliberate manipulation of instruments to fine tune the results according to the researcher's pre-meditated finding is falsification or research fraud which does not add value to the body of knowledge and does not address the intended purpose of the research (Kour, 2014). This defies the ontological and epistemological assumptions underlying scientific or empirical research. To this end, the researcher tried to uphold his academic credibility by venturing into the unknown without any pre-conceived findings and obtained thick descriptions of the phenomenon from diverse methodological and paradigmatic lens. The researcher worked to achieve credibility of the research through triangulation of designs, sampling techniques and methods.

The qualitative strand dominated the nature of data collected. However, a significant amount of quantitative data was collected from the 80 respondents. The data was presented in form of percentages, tables, and diagrams. The research questions both in the interview guide and the open-close ended questionnaire formed the basis for the generation of universal themes for both qualitative and quantitative data. The six steps Thematic Analysis (TA) allowed for the researcher to adopt an inductive or deductive approach to data analysis (Niece, 2011; Hallodorson, 2009; Ibrahim, 2012). By having themes around the 5 research questions, the research followed the deductive approach. However, the qualitative dominance led to the emergence of new themes making the inductive approach to TA dominant throughout the analysis. There is no distinction between data analysis and its interpretation but an overlap of the two in TA. This is supported by Cohen *et al.* (2011, p. 537) who argue that the distinction of data in qualitative analysis is seen through, "the merging of analysis and interpretation and often by the merging of data collection with data analysis." Just like in the Grounded Theory, data analysis starts during data collection, thus new data would find their grounding on already analysed data (Braun & Clark, 2006). This resonates well with the adopted exploratory-sequential design in which quantitative data had its grounding on already analysed qualitative data. It needs mention that the TA is applicable to qualitative analysis and in the context of this inter-paradigmatic research, it was used to complement mixed analysis focussing mainly on the qualitative strand.

Mixed analysis refers to the analysis of data generated through quali-quanti in mixed research (Combs, 2011). Onweugbuzie & Combs (2010) suggest 13 steps and decisions that a mixed paradigmatic researcher should address before, during and after the analysis. This does not necessarily mean that all the steps would apply in every mixed method but are a guideline implying that they can fully or partly apply (Teddlie & Tashakkori, 2011; Onwuegbuzie, 2008).

<u>Criterion 1</u>:   The purpose or rationale for conducting mixed analysis.

Criterion 2:   The philosophy underpinning the mixed analysis.
Criterion 3:   The data types to be analysed.
Criterion 4:   The data analysis types to be used.
Criterion 5:   The sequence of the mixed analysis.
Criterion 6:   The interaction level of qualitative and quantitative analysis.
Criterion 7:   The analytical components priority.
Criterion 8:   The analytical phases number.
Criterion 9:   The nexus or link to other design components.
Criterion 10:   The research process phase when all analysis decisions are made.
Criterion 11:   The nature of generalisation.
Criterion 12:   Orientation of the analysis.
Criterion 13:   The cross-over nature of the analysis.

A two-level embedded mixed research design was utilized in the study, which was designed to make a comparative analysis on the impact of pedagogy versus andragogy in institutional learning. The study represented a complete exploratory sequential design. This design, incorporated dialectical, pragmatist and complementary stance assumptions (i.e., Criterion 2, philosophical underpinning). It involved inter-paradigmatic sequential exploratory, case study, phenomenological and a descriptive investigation and comparative analysis of the impact of pedagogy versus andragogy at the various stages including the data analysis stages. The qualitative analysis dominated the quantitative analysis (i.e., Criterion 7, priority of analytical components). The first phase of the analysis generated qualitative data which was scrutinised and categorised into themes according to the qualitative research questions on the interview guide. The second phase generated quantitative data which was then juxtaposed against the phase one data. It is important to note that data from quantitative strand was generated from questions almost similar to those in the qualitative strand, thus similar questions from both qualitative and quantitative strands generating textual and statistical data fell under the same themes. This provided the basis for juxtaposition to obtain convergent and divergent perceptions (i.e., Criterion 3, number of data types). The qualitative data analysis in phase one informed the analysis in phase two bringing about a sequential interactive analysis (i.e., Criterion 6, level of interaction).

In the second phase of analysis which is the quantitative analysis, a lower priority emerged and at face value would imply a confirmatory role or rejection role of quantitative data to already obtained conclusions from the qualitative analysis (i.e., Criterion 7, priority of analytical components). The interview generated data informed the analysis of quantitative data (Criterion 6, level of interaction). The second phase of analysis though being termed the quantitative analysis became embedded because it then looked at qualitatively analysed data against the quantitative raw data. The quantitative data was then analysed on the basis of

already obtained results in the respective themes. (i.e., Criterion 4, number of data analysis types). From the foregoing as informed by the research design and data analysis design, the analysis was sequential from qualitative to quantitative respectively (i.e., Criterion 5, sequence of mixed analysis).

The mixed analysis framework was Exploratory-Sequential design-based and followed the quali-quanti strand in a two phased and not parallel analysis (i.e., Criteria 8, number of analytical phases; Criterion 9, link to other design components). The rationale for conducting the mixed analysis according to Greene *et al.* (2007) cited in Combs (2011) was that of triangulation, complementarity, expansion and development (i.e., Criterion 1, purpose for conducting the mixed analysis). Mixed analysis decisions occurred sequentially from the qualitative then merged with the quantitative analysis decisions. The decisions were therefore *posteriori* that is inductively from representative participants or cases, making naturalistic generalisations from the lived experiences of the professoriate and the students. (i.e., Criterion 10, phases of research process where analysis decisions are made).

Phase 1 involved data generated from key participants or data rich cases, it then yielded a case-oriented analysis (i.e., Criterion 12, analysis orientation) that led to internal generalizations (i.e., Criterion 11, type of generalisation). The second phase was process-experience oriented because it combined the variable oriented and case-oriented approaches (i.e., Criterion 12, analysis orientation) that led to internal and external generalizations implying a quali-quanti meta inference (i.e., Criterion 11, type of generalizations).

The chapter has focused on the research philosophy, the adopted approach as informed by the philosophy and the four research designs as well as grounded theory. It also looked at the data collection methods in the form of interviews and questionnaires, the types of population from which the sample was drawn as well as the sampling techniques and the sample. The qualitative data was generated from a purposive sample of 10 participants drawn from the professoriate (n=10). The quantitative data was generated from a sample of 80 respondents drawn from randomized sample of the professoriate and students (n=80). The randomized sample sought to address the issues of generasability or transferability. However, for both paradigms, the issues of trustworthiness (validity and reliability) were addressed in this chapter. The chapter also highlighted the research ethics that the researcher followed to ensure the success of the study. Justification for the presentation and analysis of the data collected was made considering the methodology, research designs, sampling procedures and data collection methods and instruments used. The next chapter looks at data presentation, analysis and interpretation.

CHAPTER 4:
Impact of pedagogy versus andragogy in institutional teaching-learning: Evidence from the Faculty of Education, University of Zimbabwe

This chapter presents data that was obtained through in-depth interviews and questionnaires. The data reflects the lived experiences, perceptions and opinions of the professoriate **(n=10)** as derived from in-depth interviews. In line with the dominance and sequencing in mixed methods and exploratory sequential design, the data in this chapter provides quantitative perceptions of randomly selected lecturers, Masters and Undergraduate students from the Faculty of Education **(n=80)**. This is in line with the exploratory sequential design and the qualitative dominance over the quantitative strand. The quali-quanti sequencing ensured that the data is also presented in the form of tables and diagrams to complement the qualitative verbatim extracts. The verbatim quotations and statistical data are followed by analytical statements as informed by the 13 steps of mixed paradigm analysis by Onweugbuzie & Combs (2010) as well as Teddlie & Tashakkori, (2011) discussed in Chapter 3.

The analysis statements reflect the respondents/participants behind and broaden the understanding of the comparative impact of pedagogy versus andragogy in institutional teaching-learning. Whilst the interview guide was structured in thematic sections basing on the five research questions, the multiple realities of qualitative research saw new themes emerging as the researcher interacted with the participants. These themes formed the basis for data presentation, analysis and interpretation. This approach is supported by Neuendorf (2019) who argue that whilst the researcher may begin the analysis with tentative themes or templates (*a priori* codes), epistemologically, thematic analysis requires that these codes be flexible so that they can be modified as the analysis progresses. In line with research ethics explained in chapter 3, the participants are identified alphabetically where verbatim quotations were captured.

The data for the study was elicited from chairpersons and senior lecturers from the departments **(n=10)** through in-depth interviews while questionnaires were administered to lecturers and students **(n=80)**. Theme A sought the views and opinions of the professoriate on the tenets of teaching learning that must be addressed for an educational model to be considered effective and efficient. Theme B sought to bring to the fore the impact of learner needs versus Minimum Bodies of Knowledge (MBK) on developmentalism. Theme C sought to come up with an absolute model of institutional learning while Theme D looked at the arguments of the professoriate on the impact of Strategic Educational Directives (SEDs) such as

Education 5.0 on the models that are adopted by higher education institutions. Theme E focused on the perceptions of the professoriate and students on the impact of pedagogy and andragogy in institutional learning.

Table 4.1 Distribution of respondents by sex and academic qualifications **(n=90)**

Serial	Educational Level	Gender Male	Female	Sample Size	No of responses	Response rate %
1	Professors	01	01	02	02	100%
2	Doctors (PhD)	10	05	15	13	86.7%
3	Master's Degree	2	3	5	5	100%
4	Bachelor's Degree	1	2	3	3	100%
5	MSc Students	23	19	42	42	100%
6	Undergraduate Students	12	11	23	23	100%
7	Total Sample Size	49	41	90	88	97.8%

The response rate was 97.8% and satisfy Lincoln & Guba (1985)'s construct of transferability. This implies that due to the situational uniqueness of qualitative research which dominated the mixed paradigm, the findings can be transferred to similar educational contexts such as universities and colleges. The response rate of the randomized sample indicates a representative sample of those that are involved in the teaching-learning in institutional programmes. The multi-method data collection where 10 lecturers were purposively selected for interviewing and 80 respondents (lecturers and students) were randomly selected ensured credibility, dependability and confirmability of research findings as explained in chapter 3. However, the proportion of female respondents was 45.6% of the total sample which depicts the inequitable distribution of teaching and learning opportunities for women in institutions of higher learning.

Table 4.2 Distribution of the sample by Age **(n=90)**

Attributes (Age in yrs)	No of Responses	Percentages (%)
26-35yrs	17	18.89%
36-45yrs	28	31.1%
46-54yrs	27	30%
Above 55	18	20%
Total	**90**	**100%**

The above demographic data indicates that the respondents/ participants had relevant experience in the teaching-learning of adults and had an above articulation of the concepts of pedagogy and andragogy by virtue of their academic qualifications and age. It therefore goes without saying that all things being equal, the data obtained with respect to the impact of pedagogy and andragogy from the sample could be credible, dependable, confirmable and transferable to similar teaching-learning contexts.

The data obtained reflected the lived experiences of the professoriate as educationists, educational administrators, as adults and as learners in life-long learning. To this end, participant A had the following to say;

> "… The purpose of education across the world is to develop the intellectual capacity of man so that he attends to the day-to-day problems effectively and efficiently. In other words, the aim is to perpetuate development, be it human, economic, environmental, social or political. This is only possible if the education system looks at what the society and the learner need. These needs must be harmonized to come up with a curriculum that is holistic. What the society needs must then be taught to the individual learners so that there is intellectual, moral, skills and attitudes capacitation consistent with the nature of life that a society aspires to achieve. However, during the process of learning, there are also individual needs which are so varied that they cannot be captured in the curriculum, but the omission of which can then affect comprehension and graduates' capacity. These need to be factored and addressed during the teaching process."

The aspect of having an institutional model that leads to development is also shared by participant C who had this to say;

> "…Every model of institutional learning must be in a position to address the fundamental ingredients of development. The society, the learners, the government and the institution providing the teaching are active players in the educational discourse, thus their needs must be addressed."

In the same vein participant D had the following to say;

> "…My experience has shown me that our education system lacks a strong practical application. However, a model must lead to development through addressing the needs of developmentalism."

This line of argument by participants A, C and D is in tandem with Dambudzo (2015)'s argument that the effectiveness of university learning is determined by whether it promotes development or not. This is achieved through teaching that is problem based, collaborative, project driven, enquiry based and promoting critical thinking. To this same effect, participant B sentiments are closely related to those of participants A, C and D and argues that;

> "… A model must provide and ensure that the graduates that are produced under the model are functional and are not obsolete. Education should be responsive to individual and societal problems. It must provide for innovation and not stagnation. The society and the people must progress quantitatively and qualitatively. Whilst theorisation is unavoidable, the theories must be put into practice. Learners, the society and government must see the value of leaning through development."

Participant B's line of thinking that an ideal model must be responsive to individual and societal needs as well as being practical is neither new nor far-fetched as it is supported by Knowles *et al.* (2012) who talk of a model that allows application of theory to the real world. Merriam (2002) argues that learning should not be all about theorisation and mindless idealism. It should aim at addressing practical and real-world situations and these must be brought into the classroom through simulations, role plays, group discussions, field projects, skills practice and case studies etc. (Wankel & DeFillip, 2003). The importance of having an education system that produces functional graduates is further buttressed by the criticism offered by Mahmoudi *et al.* (2014) who argue that some universities have continued to produce dysfunctional graduates, products of Silencing Education who are mere conformist of the industrial discourse. This is supported by Bryson (2013) who argues that despite the diverse and multiplicity nature of adult learners in universities, the emphasis on design and delivery has basically remained on uniformity and conformity rather than multiformity making the education progressively regressive (Garuth, 2014). The implication of all this is that in addition to satisfying curriculum needs, the institutional model must address the learner and societal needs and must contribute to development through application of theory into practice.

Along with the same argument of an ideal model having to satisfy developmental needs of a society, participant E had this to say;

> *"…The effectiveness of an educational model hinges on its ability to satisfy the aspirations of the community through production of functional graduates. Therefore, if the model ensures that the educational and developmental needs of the community are addressed by whatever means, it becomes effective and efficient."*

The argument by respondent E above of an educational model meeting the national aspirations of development is supported by Mohammed *et al.* (2018) in the Nigerian context and Addae (2016) in the context of South Africa and Ghana who argue that developmentalism of a nation hinges on an effective education system whose curriculum is reflective of the national and societal aspirations.

The thrust of participants B and E is on the functionality of graduates in the developmental discourse. According to Adewale (2014) cited in Agbowuro *et al.* (2017), functional education entails a holistic and educational experience that is directed on the identification of situational problems, gathering of information to make decisions in a global environment of challenges and realities of life. It is also concerned with enhancing graduates and end users to gain knowledge, skills, and attitudes to utilise new concepts as a vehicle for meaningful development and sustainability (Adewale, 2014). Functional education should produce graduates who can manufacture raw materials, machines, invent new designs and tools needed for local and international markets and subsequently transform the nation from

consumption to a manufacturing status as argued in Rostow (1960)'s fifth stage of development (Udoh & Akpan, 2014).

The functionality of an education model is also supported by Waghid (2010a) cited in Zembere (2018) who argues that the teaching model in universities should advance democratic teaching learning processes. It should also promote the students' autonomy in thinking and participating in the design and delivery of instruction. The professoriate and students must actively participate in the teaching learning process as change agents (Subba, 2014). In the context of Brundiers & Redman (2010), classroom activities, the curriculum and the methodology must be linked to the realities of the world. There should be extension of the learning organisation to the learning community through Community Engagement (CE) (Kearney & Zuber-Skerrit, 2012). The above argument is supported by participant F who had the following to say;

> *".... It is important that for a model to be effective, it should be able to harness theory into practice."*

Participant I had the following to say;

> *"... For a model to be effective, there are system factors such as the national curriculum demands, the institutional factors such as facilities, clientele analysis and the classroom factors such as varied methodology that must be achieved. Over and above, the societal and learner needs should be addressed through both theory and practicality of concepts."*

Participant F also acknowledges the importance of addressing the system, school and classroom factors as follows;

> *"...The model at strategic level or national level should be informed by a pragmatic philosophy. It must always be informed by the dictates of the government, the learner and societal needs. This should be augmented by a comprehensive needs analysis and curriculum development involving all stakeholders. These stakeholders include the learners, the society, the government, the captains of industry and the institutions. The institutions should provide the best physical and human resource complement where the latter should play a pivotal role In ensuring comprehension through relevant methodologies."*

This line of argument by participants I and F resonates well with the literature provided by Schreens (2015) on educational effectiveness. The argument is that an effective model is one that combines system level, classroom level and school level factors. Chan (2010) emphasises the importance of classroom activities, school level factors in which he argued that institutional education can be effective and efficient when the varied methodologies are complemented by conducive physical and psychological environment of mutual respect and reciprocity. In the context of the Society for Research on Educational Effectiveness (SREE) (2011), the model should give direction on the purpose of education, how it is to be provided, in what circumstances, for whom and how these practices and policies would positively or negatively impact on the overall education outcome. This should be captured in a nation's education philosophy as argued by participant F. The implication thereof is

that there are certain requirements beyond the institution that must be addressed by the model. These are considered system factors and include such aspects as pragmatic philosophy, minimum bodies of knowledge, pragmatic educational directives such Education 5.0. The model must ensure that the classroom factors ensure comprehension and real-life application of concepts rather than theorization. This real-life application of concepts can be achieved through varied methodologies and a conducive learning environment of mutual respect. As part of addressing the school level factors, the model also ought to have a constant review of learner needs and regular community engagement as part of environmental scan to obtain current societal needs.

In line with criterion 3 (data types to be analysed) explained in Chapter 3, all the 78 respondents indicated on the questionnaires that an educational model would need to address the learner needs both in the classroom and off the classroom through their participation during the design and delivery. It should also address the demands of the society through transforming theory into practice, producing goods and services and should produce graduates who are innovative. This argument brings areas of convergence between the qualitative and quantitative data (criterion 6; the interaction level between quali and quanti). The qualitative responses being supported by quantitative arguments are in sync with criterion 7 (analytical component priority), criterion 13 (cross over nature of the analysis) and criterion 5 (sequence of mixed analysis). Therefore, in line with criterion 10 (the research process phase when all analysis decisions are made), a model must address learner needs, societal needs, be consistent with the national education philosophy, promote developmentalism, produce functional graduates, satisfy the system, school and classroom factors. It should also promote self-direction so that graduates explore and innovate beyond what they are given in the classroom. It should enable the production of goods and services rather than theorisation.

An absolute model in higher education institutional programmes.
On being asked what they thought was the most impacting model between pedagogy and andragogy, participant A had this to say;

> "… I think when introducing students to new concepts and subjects, there is need for prescriptive teaching, making pedagogy more effective in this context. Andragogy assumes a more dominating role when students build on the taught principles, conducting collaborative, experiential and transformative learning which is the thrust of university learning so that at the end, there is production of goods and services."

The above argument by respondent A on fundamentals and new concepts being taught through pedagogy agrees with McGrath (2009)'s argument that in certain contexts, adults come to universities without prior background of certain disciplines such as accounting, law, medicine etc. In these circumstances, the lecturers would have to teach the fundamentals pedagogically.

Participant C had this to say on the impact of the two models;

>"… The process of needs analysis requires that all stakeholders who will benefit from the programme be involved, thus this inclusivity is andragogical. However, the people who might then participate in the process of learning once the needs analysis and curriculum development are over might not be the ones who were involved in the process of needs analysis, thus some of the concepts might end up being a prescription and of no relevance to the learners involved. The government weighs in with a developmental orientation such as attainment of a middle-income economy by year 2030 and quite an array of aspects that it seeks the education system to achieve. This becomes a top-bottom to curriculum development which is pedagogical. Every subject has got its core values or principles which are mandatory for anyone studying the subject to know and these must be learnt whatever the case. This is pedagogy informed by perennialism as a philosophy of education."

The argument of participants A and C above that put andragogy in a dominating role during needs analysis and curriculum development is in sync with Evans (2006) who argues that the process of curriculum development should be learner inclusive, but Wang *et al.* (2014) posit that the determination of what must be learnt cannot be the prerogative of learners alone. So, in as much as learners are to be included in the process of needs assessment, so should the other stakeholders. Their line of thinking on pedagogy assuming an upper role in teaching subject fundamentals and reducing as the learning progresses is in sync with Teodoro & Mesquita (2014)'s assertion that straight lectures are necessary for teaching principles and concepts and when entering into generally strange areas. However, progressively, depending on the competence of the facilitator, there should be a paradigm shift to andragogy to cement these principles through life applications and tapping into the students' experience.

Participant E had the following to say when asked on the comparative impact of pedagogy versus andragogy;

>"… Depending on the level of the programme and stage of learning, pedagogy would be more effective in undergraduate studies where the focus is on grounding or building a base for future studies. However, it does not mean that as time progresses, andragogy is not employed. The other consideration is that at diploma and undergraduate level, the participants are the youths who may not have the self-direction, experience, intrinsic motivation and whose desire to learn may not be inspired by problems but by mere aspirations to attain academic qualifications as others. This makes pedagogy effective in these circumstances. As students continue with their studies up to post-graduate level where the majority of the learners are non-traditional, the most effective model for delivery is andragogy. This does not mean that pedagogy becomes non-existent."

The above argument by participant E measures the impact and applicability of the two models basing on the stage of learning. The argument of the participant acknowledges Southhard (2017)'s assertion that andragogy may be applicable to post-graduate learning and in the later years of undergraduate learning. It also resonates well with Oyeleke (2018)'s argument that the concepts of andragogy and pedagogy are intertwined giving a sliding scale from self-directed in the latter part of

institutional learning to teacher centred learning during the introductory phase of learning. The meaning that can be drawn from this is the complementary role and contextual applicability of the two models along the learning continuum.

On being asked the most impacting model between pedagogy and andragogy, participant H had the following to say;

> "… *Both methods are effective and efficient depending on the context in which they are applied. It is important to note that it is difficult to have one model dominating institutional learning from the beginning up to the end of the teaching process. Therefore, the two models are contextually effective and efficient. What is important is to note that institutional learning is made up of adults, thus with time the andragogical model would assume dominance over the pedagogical model not implying that the latter becomes extinct or obsolete."*

Participant H's contextual effectiveness of both pedagogy and andragogy is amplified by Usman (2015) and Tight (1996) who argue that though seen dichotomously, the models have got functional overlaps but one could be having more impact on the teaching learning process depending on the context. They further argue that the effectiveness, efficiency and efficacy of the models would depend on the degree to which administrators, the professoriate and students adopt and adapt to the multiformity of higher learning among other situations.

Consistent with criterion 3 (data types to be analysed), criterion 5 (the sequence of mixed analysis) and criterion 7 (analytical component priority) suggested by Onweugbuzie & Combs (2010), quantitative data from 64 respondents showed that it is not proper to say one model is more effective than the other because in all stages of educational systems planning, be it at the needs analysis, the curriculum development or delivery, both models complement each other. However, the complementarity which the respondents referred to is further clarified and amplified by the other 11 respondents whose argument is that though there is complementarity, during needs analysis and curriculum development, andragogy is more effective and topical than pedagogy, though the latter is always there. In the classroom, the two complement each other but when students are being introduced to new concepts, subjects and at lower levels of learning such as diploma and undergraduate levels, pedagogy dominates. However, apart from the mentioned cases and others, the andragogical model dominates the classroom activities in institutional learning as learners build on the prescribed principles such that towards the end of undergraduate studies, andragogy would have emerged conspicuous. In line with criterion 6 (the interaction level of qualitative and quantitative analysis), there is a positive interface between this quantitative view and the views provided by the qualitative participants.

This interaction level shows that the qualitative strand is being acknowledged by the quantitative view (criterion 5; sequence of mixed analysis and criterion 12; orientation of analysis). The generalization from the two data sets is that andragogy is more effective in needs analysis, curriculum development and dominates much of classroom activities serve for the time when new concepts and subjects are introduced as well as the early days of undergraduate studies where pedagogy assumes dominance (criterion 11; nature of generalisation). This does not mean that there is one model at a time but one becomes more topical, however complementing each other throughout the learning process. Though andragogy is dominant during needs analysis and curriculum development, the role of pedagogy must be located in the prescribed fundamentals by government in line with its desired development trajectory. This again shows the complementarity of the two.

Situations will determine during delivery whether to use pedagogy or andragogy. Therefore, in line with criterion 10 (the research process phase when all analysis decisions are made), neither pedagogy nor andragogy is the most impacting model. Their effectiveness is contextual and complementary depending on the level of design and delivery, the subject being taught, the level of study, the nature of students whether traditional or non-traditional and their level of comprehension etc.

When asked on the impact of MBK on developmentalism, participant D had this to say;

> "… It does not follow that the curriculum captures the needs of all the people and it should also be known that the society is dynamic and constantly evolving and needs would also change over time. In this regard, the curriculum would also at one point become obsolete. In this respect, we cannot then say the MBK are enough to bring about real and total development but there is need to ensure that the curriculum remains afloat to move with contemporary development trends."

Garwe (2018) defines MBK as the curricula which must be learnt by students who undertake each study programme at the higher education institutions in Zimbabwe. The determination of this curricula is done by ZIMCHE through experts in each of the study areas and will help in achieving comparable standards in what is learnt by students embarking on similar degree programmes at different universities. The MBK is regarded as the "tuning" project to bring comparability and compatibility of university curricula for higher education community. This definition acknowledges that there is needs analysis, expert advice and government involvement which is in sync with participant Ds argument. Garwe (2018) argues about compatibility and comparability of global higher education curricula, but chances are that what brings developmentalism in one country may not be functional in another country because of social, historical, political and cultural factors etc. This therefore justifies the last part of participant D which argues about MBK as no panacea to total development.

Participant E had the following to say on whether MBK capture all the learner, societal and developmental needs;

> "…The name tells it all, they are minimum standards that must be addressed in the teaching learning and therefore cannot address learner, societal and developmental needs in totality. There is need for continuous needs assessment and to go beyond the benchmarked standards consistent with the current developmental thrust, current learner and societal needs."

Participant H had the following response upon being asked to comment on the impact of MBK on developmentalism and learner needs;

> "… As rightfully stated, they are minimum bodies of knowledge which could be defined as basic skills, knowledge and attitudes that a programme should satisfy. However, it does not mean that all that which is taught is relevant to everyone. This implies that institutions should not end on MBK, sit back and expect to address developmental needs in an ever-changing environment. A lot must be done such as ensuring that the needs of those that participate in the actual learning are met. There is need for constant university-community engagement to address developmental needs. To this end, the autonomy of the university and the necessary flexibility needs to be observed so that the institution can add value to the MBK rather than religiously following them."

Participant I made the following comments on the impact of MBK on development;

> "… It will be utopian for an education system to rely entirely on MBK for development because these can become obsolete at one point depending on whether those that are involved in the learning see them as relevant to their needs. One other aspect is that they are minimum skills determined at national level and may not capture all the needs of different societies and learners. They are just a yardstick to measure the minimum level of knowledge that should be achieved in a particular subject or programme. There is need for institutions to address the needs of the participants through conducting a needs assessment prior to the commencement of programmes so that these needs are factored in to complement the MBK."

Participant F had this to say;

> "… MBK need to be complemented by a thorough understanding of pedagogical and andragogical methodologies so that one would cater for the shortcomings of the other. As an example, andragogical in-class methodologies would ensure that learners are given the latitude to research further to develop themselves and the societies from which they come from."

The above responses from participants D, E, H, I and F resonate well with the literature provided by Tapera an& Kuipa (2016) who argue that the quality of graduates from most East African countries do not meet the employers' expectations because of lack of relevant skills and competencies. This is the problem that affects the Zimbabwean institutions of higher education as postulated by Mlambo (2008), Raftopolous (2006) and Nyazema (2010) whereby the MBK are fundamental concepts which cannot solely be relied on for development. Raftopoulos (2010) weighs in by indicating that those better off in society have resorted to sending their children to outside universities where they think there is quality education. The implication thereof is that it is impossible to address developmental, learner and societal needs

through MBK. There is need for constant review of the MBK and continuous needs assessment of the society and those involved in the learning.

Participant A had a different view and when asked he had the following to say on the impact of MBK on developmentalism;

> "...MBK can address the societal needs and at the same time lead to significant development provided they are arrived at through a thorough process and they are constantly reviewed say after 2 years instead of the usual four or five years. The other problem is that if there is a lot of theorisation in the MBK, definitely they will not lead to the desired development. They should be informed by a pragmatic and progressive philosophy. They should address the fundamental ingredients of development as dictated by society, learners and the government and should be reviewed regularly. My question would be why is it that we have got people who are going to outside universities and these people are considered functional and marketable when they graduate yet the curriculum in those universities is premised on MBK?"

The above response by participant A seems to confirm the argument by Raftopoulos (2010) who argue that since its inception in 2005, ZIMCHE, has not been coming up with MBK that are reflective of what the society wants and those that perpetuate development. To this end, he observes that those better off in society have resorted to sending their children to outside universities where they think there is quality education. In support of this argument, Garwe (2015) argues that the Council has borne the brunt of interfering with university autonomy such as recommendations to include or remove certain degree programmes. So, from the foregoing it would imply that MBK are not the problem unto themselves but the regulating authority. The meaning that can be drawn from the responses is that if MBK are not thoroughly done, not constantly reviewed, not complemented by continuous needs assessment and in the absence of institutional autonomy, they become ineffective for development.

Consistent with criterion 3 (data types to be analysed), criterion 5 (sequence of mixed analysis), criterion 12 (analysis orientation), from the 77 questionnaire responses, there is a general consensus and concurrence with the above qualitative arguments that MBK need to be complemented with current learner needs, meaning that there must be alterations to the curriculum at institutional level so that facilitators embrace the current needs of learners. The society is not stagnant and therefore there must be continuous needs assessment preferably yearly to keep pace with the changing learner, societal and developmental demands. The interaction level from the two types of data is seen on the concurrence of quantitative data to the opinions and arguments summarised from the qualitative respondents (criterion 6; interaction level of qualitative and quantitative data). In line with criterion 13 (cross over nature of analysis) and criterion 11 (the nature of generalisations), there is generally an agreed position that MBK are not the panacea to development. There is need to have a thorough process of coming up with the MBK which should be informed by a

pragmatic philosophy, and they should be constantly reviewed. There is also need for continuous needs assessment to capture the diverse learner needs.

Though educational directives could be many to include STEM and Education 5.0, much of the data gleaned focused on the effect of Education 5.0 and the extent to which it dictates the model to be adopted in institutions. Upon being asked to comment on the impact of SEDs on the institutional model to be adopted and what the participants thought of Education 5.0, participant B had this to say;

> "… Depending on the directive, institutions can become too theoretical or too pragmatic or strike a balance between theory and practice. So, the blame on whether institutions are producing theoretical graduates should not only be borne by the institutions but the government as well for coming up with a philosophy which is too theoretical."

In the context of participant F, the following was said:

> "… It is something which I think is obvious that whatever an educational directive from government, ours as educators is to adhere and advise through the rightful channels. So, a directive can have a theoretical or practical orientation and as such whatever that we teach will be informed by such orientation. Education 5.0 has got a practical orientation, and this is the reason why the UZ is reconfiguring its programmes and departments etc. so that it meets the dictates of the directive. My thinking of Education 5.0 is that it is a good model which is a paradigm shift from the traditional theorisation to practicality."

Participant I acknowledges the importance of Education 5.0 and had this to say:

> "… Yes, these directives affect the way we teach and the nature of graduates that we produce and as such I think Education 5.0 if well understood and implemented would greatly improve our education system. It is a directive which indicates a paradigmatic shift from perennialism to pragmatic philosophy of education. It emphasizes on less classroom hours and more of fieldwork. Furthermore, it is a model that seeks to tap into our natural resources premised on Heritage Informed Research (HIR). It is a model that seeks to develop by looking inwards however cognisant of other opportunities outside."

The above responses from participants B, F and I confirm Magaya (2019)'s assertion that Education 5.0 should be contextualized as remedy to the historical chronologies that have weakened Africa's education system. He argues that Africa missed the first industrial revolution because of slavery, the second industrial revolution because of colonialism, the third industrial revolution because of the liberation struggles and it should now participate in the fourth industrial revolution spearheaded by technology and innovation. The meaning that can be derived therefrom is that Education 5.0 is a model that seeks to perpetuate development which is needs based, self-reliant, endogenous and ecologically sustainable but cognisant of the fact that we live in a global village, thus we need to keep pace with contemporary trends. The over-arching effect of SEDs on the educational discourse to be adopted by institutions is reflected in the above given responses.

When asked on the effect of Education 5.0 on institutional learning, participant A had the following to say;

> "… Yes, it is a pragmatic model and would to a greater extent change our educational discourse towards development but I feel it has compartmentalised education to assume others as being more important than others. The argument is that the engineer (Engineering) who produces agricultural machinery (Agriculture) and mining machinery (Geography), can become ill (Health sciences), can commit crimes (Law) and would need to market his or her products (Commerce) through a language (Arts) and will live in a community of a particular culture and morals (Social sciences). Development should be holistic and not pursued along one facet and, in this case, there is a very strong bias towards economic development."

Participant E had the following to say in the context of the effect of Education 5.0;

> "… I personally feel that Education 5.0 just like the new curriculum are not quite understood and have got their own complications. There are certain educational directives that are promulgated for institutions to abide by but without due consultation with the institutions. I do not believe that there are subjects or programmes that are considered irrelevant in total development unless we want to pursue economic development at the expense of other tenets of real development. One aspect that I have noted is that everyone is focussing on coming up with some form of production, and department and faculties are going out of their traditional mandates and purposes to fit into the paradigm of production. I feel, we need to embrace Education 5.0 within our educational domains as departments and faculties and the authorities must not define development in Education 5.0 by the number of innovations and goods because some departments are there to entrench Ubuntu, provide historical orientations etc and these must not be relegated to the dustbins."

Participant H weighed in with the importance of all programmes in developmentalism and had this to say;

> "… If development is to be premised on STEM, are we saying that the study of humanities and social sciences is not relevant to our development? What then do we have to say to those well recognised universities abroad that continue to teach humanities and social sciences to the advantage of their developmental discourse? Can we surely resuscitate the struggling economy, end the rampant academic fraud, corruption and poor corporate governance etc. through STEM? Issues to do with corruption, fraud and poor corporate governance are more to do with Ubuntu than scientific innovation. How are we going to promote Ubuntu in this discourse? Are we saying the teaching-learning of all programmes should lead to tangible goods? Where do we put our social sciences and humanities? The model seems to address economic development rather than real development which encompasses economic, political, social, cultural, human and environmental development etc."

The arguments put forward by participants A, E and H relate well to the concept of holistic education and holistic development. Holistic education is education that focusses on completeness and avoids excluding any aspects of the human experience. Education should cultivate a relationship in the individual of aspects such as the intellectual, spiritual, emotional, physical, aesthetic and social. It also focusses on relations between the individual, society and the environment, the intrinsic self of students and outside environment, reason and emotion, different levels of knowledge

and how to know. It is not confined to fundamental skills but life experiences (Majethia & Patel, 2018). This argument is augmented by Hettne, (2008) who argues about Mainstream Development (MD) as that whose focus is on economic development and in this context economic development towards Vision 2030. However, holistic development is premised on the quantitative and qualitative growth of people in relation to their community and environment that sustains them as means of removing all the un-freedoms and poverties (Todaro & Smith, 2015; Johan & Jespersen, 2016).

The meaning that can then be derived from this literature and the given responses is that Education 5.0 does not promote holistic development in that it has compartmentalised education shunning other programmes that do not have a close nexus with STEM or whose orientation is not tangible production. Credit should however be given to the educational paradigm for trying to pursue endogenous, needs based and self-reliant development as expounded by the heritage-based philosophy. This is the Alternative Development (AD) discourse as advocated by Nerfin (1977) and Marx-Neef (1991).

From the questionnaire responses, all the respondents thought that once an educational directive is promulgated, it sets the tone for the design and delivery of instruction in institutional learning. They argued that Education 5.0 brought a new pragmatic approach to institutional learning, thus there is bound to be a paradigm shift from theoretical to practical orientation to learning. Generally, Education 5.0 is one strategic directive that implies that institutional learning should adopt a model or models that ensure that its desired end state is achieved. This argument brings to the fore convergence of both qualitative and quantitative views (criterion 6; the interaction level of qualitative and quantitative analysis and criterion 11; the nature of generalisation). However, despite this convergence, there is a divergence on what Education 5.0 entails. Twenty-one (21) respondents from the quantitative strand argue that Education 5.0 is a discourse which is rooted in science, technology, engineering and mathematics and perceives development as an aggregation of goods and pays little attention to the value of humanities in development. This line of thinking is shared by participants A, E and H who also argue that Education 5.0 would influence the institutional learning models towards pragmatism but seems to be devoid of other facets of development which are the human, political and social development which are inculcated by humanities and social sciences.

From the above points of convergence and divergence, the resultant generalisation is that Education 5.0 as a strategic educational directive greatly influences the choice of learning models to be adopted by institutions. It is important to note that Education 5.0 seeks to perpetuate development which is needs based, self-reliant, endogenous and ecologically sustainable but cognisant of the fact that we live in a global village,

thus we need to keep pace with contemporary trends. Generally, Education 5.0 needs to be achieved by a more pragmatic, work oriented, research oriented and an innovation-oriented model. Learning should lead to the production of goods and services. It is also important to note that the discourse seems to relegate the role of social sciences and humanities in development. To this end, the parameters of the model need to be redefined so that we do not throw away institutional programmes that are relevant for developmentalism only to need them in the future. There is need for inter-faculty learning where all the faculties assert their position in the developmental discourse without relegating other programmes to the dustbins.

The gleaned data led to the development of a model that reflects the connoisseurship of teaching learning in the context of the respondents and participants.

Asked whether the current institutional models have embraced the aspects of Ubuntu, humanagogy, heutagogy and ergonagy and whether these models add value to institutional learning, participant B had this to say;

> "… Whilst some of these terms might appear to be new but given the explanations, it would appear as if some other changes that the government has been trying to implement such as the recommendations of the Nziramasanga commission, STEM, the new curriculum and Education 5.0 are some of the efforts that fall within the domain of these models. I believe there are certain aspects of practicality that have been pursued which are consistent with those models. I think if ubuntugogy, humanagogy, heutagogy and ergonagy are to be combined with Education 5.0 and other practical models, it would be very beneficial."

Participant A had the following to say on the efforts that have been made to embrace ubuntu, humanagogy, heutagogy and ergonagy and the impact thereof if any;

> "… It is very unfortunate that 40 years after attaining independence, the country is yet to have a very impacting model. I think we realized the dis-functionality of our education system after getting sanctioned yet all along we thought that we had the best education system in Africa, boasting of higher literacy rates. My submission is that the country has done very little to ensure that 40 years down the line, we have got an innovative and production oriented institutional model and this has produced dysfunctional graduates."

The above line of argument is not far-fetched as it is supported by Mlambo (2008), Raftopolous (2006) and Nyazema (2010) who argue that independent Zimbabwe has failed to produce functional graduates as the latter lack relevant skills and competencies needed in the industries.

Participant A further places emphasis on combining models and argued that;

> "… I feel that combining the models would be beneficial in coming up with an effective model of institutional learning but efforts must be made to ensure that we have a pragmatic philosophy that addresses our values, morals, functionality and developmental aspirations as a people. We should also tap into functional aspects of other models or philosophies cognisant of their political,

social and economic factors so that we do not repeat the same mistake of adopting the British colonial models of learning."

The above response by participant A puts emphasis on a model that respects the Zimbabwean values, morals and functionality of graduates as individuals and as members of the society. This means that our model must embrace the art and science of teaching and learning within the confines of humanity towards others (Bangura, 2017; Ganyi & Owan, 2016). It places importance on functionality it should aim to develop an adult who is cultured, who operates within the dictates of the whole society as a collective entity. The model should abide by Zimbabwean morals as these are of paramount importance and anything that violates the moral fabric and peace of others is taboo which is ubuntugogy (Ngonidzashe & Hapanyengwi-Chemhuru, 2014). The dysfunctionality of the present institutional models as highlighted by participant A is justified by Bangura (2017) who argues that universities in Africa have for long relied on the Western models causing Africa's underdevelopment, mal-development, civil conflicts and low literacy rates.
Participant C argued that;

"…My argument would be if we had done much to embrace pragmatism which I think is one fundamental aspect that ubuntugogy, humanagogy, heutagogy and ergonagy seek to address, we could have been one of the most industrialized nations in Southern Africa. I also bemoan the abolishment of the British F-system. Whilst it was colonial, we could have built on it to develop a better model, but we got drowned in theorization to the detriment of an effective and efficient model of learning. My thinking would be to have a model that combines all the practically oriented models so that we can have a holistic model of institutional learning. I envisage a model that is work oriented and that addresses industrial or workplace demands but I also appreciate that there are certain fundamentals that must be taught which form the basis for work related learning."

The above response by participant C seems to confirm the assertion by Tanaka & Evers (1999) who postulate that the effectiveness of institutional learning is benchmarked by its ability to address industrial demands which is termed ergonagy. The meaning that can be inferred is that ergonagy should be a component of an effective model, but the principles can be taught first implying that pedagogy should kick start the process of ergonagy.

Participant D had the following to say in response to what has been done to improve the effectiveness of institutional learning and the extent to which ubuntugogy, heutagogy, humanagogy and ergonagy have been embraced in institutional learning;

"… Not much has been done to embrace these aspects of practical orientation in our institutional learning though of late efforts have been seen to be emerging. I feel that we have taken too long to be responsive to the dysfunctionality of the institutional model. I agree that we should have a combined model, but we definitely need to be guided by our values as a people and have a philosophy that embraces our development trajectory as Zimbabweans. Students must be self-directed, self-determined and the learning should be capability based and should prepare students for the global job market demands. I envisage a model that promotes action learning and field research."

Participant D places emphasis on Ubuntu as postulated by Ngonidzashe &
Hapanyengwi-Chemhuru, (2014). Emphasis is on a model that prepares workers for
the global job market which is defined by Tanaka & Evers (1999) as ergonagy. The
envisaged model in the context of the participant should promote field research,
self-determination, self-directed and transformative learning which is in sync with
Hase & Kenyon (2000)'s heutagogy model. The implication that can be drawn from
this is that in the ideal model of institutional learning, there should be a combination
of pedagogy and andragogy in action learning with an ultimate focus to produce
employable graduates who can compete on the international job market. This calls
for a combination of endogenous philosophy to satisfy the internal needs and then
look for functional overlaps from outside educational philosophies.

Participant E had this to say;

> "… I think not very much has been done to improve our institutional learning judging
> from some of the things that we import yet as universities we are churning out thousands of
> graduates who cannot manufacture the simplest of those products. We have been affected
> by rote learning for a long time and it would be necessary that we look at practical
> orientation to learning. One other aspect that has affected us is non-consistence of policies
> to such an extent that policies have been abandoned prematurely. I think one underlying
> aspect on the models that you have asked is that they are pragmatic, and I think combining
> them together with pedagogy and andragogy would produce a better model. We need to
> embrace theory and put it into practice and embrace all the models for their functional
> overlaps."

The line of argument by participant E concurs with the argument by Knudson (1980)
who argues that a more holistic approach would be Humanagogy which is basically
pedagogy and andragogy combined. He argues that the model does not take away
what educators already know about pedagogy and andragogy but put both into
perspective, thus takes development of the whole being from birth to death (Holmes
& Abington-Cooper, 2001). The implication is that the envisaged model should
promote development through a process of lifelong learning, contextually applying
models for best results.

In the context of Participant I, the following was said;

> "… Yes, efforts have been made to embrace those models in question though such
> terms as used in your questioning are not common to come by. I think Education 5.0 is a
> good example that reflects the basic tenets of those models. My suggestion would be to
> look at our education philosophy and say, where do we want to go as a nation? How do we
> get their cognisance of our strengths, weaknesses etc.? We can combine these models, but I
> think the first port of call is to visit our educational philosophy because this informs the way
> we shall learn whether we want to produce graduates that are morally upright, innovative
> and competitive in the industry or otherwise. All the models should then be combined in a
> continuum where pedagogy would become the subject centred beginning then moving
> down to learner-centred, self-determined learning, transformative learning, capability and
> work-centred and lifelong learning. The importance of morals or Ubuntu can never be
> ignored in the model. One aspect that I think would be of importance is to have the model
> within the dictates of Education 5.0."

Participant I highlights the sliding effect of the model in a continuum from pedagogy to practical orientation which is in sync with the argument proffered by Oyeleke (2018) who argues that andragogy and pedagogy are intertwined giving a sliding scale from self-directed to teacher centred learning. The implication is that the institutional model should have more of self-directed learning and less of teacher centred learning.

From the questionnaire responses, a total of 48 respondents thought that not much had been done to embrace ubuntugogy, ergonargy, heutagogy and humanagogy and thought that it would be beneficial to factor in these concepts to complement andragogy and pedagogy. Their views interacted positively with those of participants A, C, D and E, who generally thought that in as much as there have been efforts of late to revamp the education system, the anomalies in institutional learning took too long to notice to the detriment of development. They argue that universities have produced graduates who are not competent in the industries. Instead of universities being innovation hubs, they have perpetuated theorisation of concepts, some of which are not relevant to the Zimbabwean development discourse (criterion 6; interaction level between qualitative and quantitative analysis). Thirty-nine respondents (39) argued that there have been constant efforts to orientate our education to the production of goods and services, production of practical graduates and promotion of Ubuntu. These views are also shared by participants B and I (criterion 6; interaction level between qualitative and quantitative analysis).

Despite these variations, both qualitative and quantitative participants felt that harnessing the models to complement andragogy would to an extent produce a holistic model of institutional learning whose over-arching philosophy would be Afro-centric, Zimbabwean to be precise. The philosophy would also tap into the positives of Eurocentric philosophies that perpetuate the desired nature of development. Learning should be done within the confines of functional values as a people (*Ubuntu*). Learning should be an interwoven process where all models work together in a continuum of Ubuntugogy-Ergonagy-Humanagogy (Andragogy and Pedagogy)—Heutagogy (UEH2) etc. Whatever that is learnt should at the end of the day lead to the production of goods and services, thus the envisaged model should take cognisance of the dictates of Education 5.0. The complementary nature of the individual models must be understood and used contextually in the teaching-learning discourse to produce a whole graduate who is able to compete internationally, contribute to society through research, innovation and be morally upright. Institutional learning must lead to qualitative and quantitative development in all aspects be it economic, political, human, social, cultural and environmental etc. (criterion 13; cross over nature of the analysis).

To this end, the envisaged model which combines all the different models should be premised on the following assumptions as generated from the gleaned data:

a. Institutional learning is not mechanistic or linearistic but fluid. Thus, an ideal model should operate within the overall confines of Education 5.0. Whatever, the teaching-learning, *ubuntu* must come first. This makes Ubuntugogy the overarching model. The teaching learning must be work related, thus Ergonagy and this must be done within the principles of complementary andragogy and pedagogy (Humanagogy). There needs to be blended learning that is industry based, collaborative learning, problem and project-based learning. The teaching-learning must be situated in the community and there should be wide use of technology that involves net-centric learning (Heutagogy). This then forms a non-mechanistic model of Ubuntugogy-Ergonagy-Humanagogy-Heutagogy (UEH2) which to a greater extent speaks to the dictates and outcomes of Education 5.0.

b. The process of Educational Systems Planning (ESP) is interwoven, over-arching and complementary from needs analysis to evaluation.

c. Institutional learning begins with teacher centred approach, progresses in a continuum to self-directed to self-determined to competence related and to work related learning. All models are at play during these processes but some would assume an upper role at given contexts, academic level and time. Institutional learning is informed by the dictates of Education 5.0 whereas the latter is informed by the national education philosophy of Ubuntugogy and Professional Philosophy (Combination of Afro-centric and Euro-centric philosophies for functional overlaps).

Participant A had the following to say;

> "… It is a simple fact that the process of teaching is not easy because it does not entail having graduated with a Doctorate or being a professor. It does not necessarily mean that if somebody has got a qualification in a particular field, he or she can then teach students in that subject or programme. A lecturer should qualify as a teacher and not a teacher of children but a teacher of adults. In this regard, the concepts of andragogy and pedagogy need to be understood by the university teacher and should know how these should be contextually applied in the design and delivery of instruction. Having university facilitators who are not qualified as teachers compromises the design and delivery of instruction."

This argument is supported by the literature provided by Thompson (2018) in which she points out that straight lectures, rote learning, recitation, mere presentations, a culture of examinations and prescriptive learning in which the lecturer assumes the repository of knowledge contributed much to the academic excellence of students in terms of grades but lacked application to the real world. She then concluded that the learning was progressively regressive in that it focused on the passing of students and theorization with very little application. The implication as drawn from participant A is that it does not matter that a lecturer is a Doctor or Professor, he or she must have a teaching qualification for the effective and efficient design and delivery of

institutional instruction. Fundamentals of pedagogy and andragogy must be learnt by the lecturer for the application of their functional overlaps.

Participant C had the following to say;

> *"... University lecturers must be trained teachers and not mere holders of degrees with no teaching qualification if ever they are to be competent. However, a university teaching qualification should be different from a secondary school teaching qualification. The emphasis in university teaching qualification should be on andragogy and on preparing the student for life after graduation rather than theorisation, yet the opposite should be true for secondary teaching certification."*

The argument by participant C confirms the literature from the Russian Federation where universities have got colleges of andragogy to ensure that those that deal with adults have got an additional qualification of andragogy in addition to the pedagogical qualification (Yoon, 2009). Rule (2017) argued that teaching at university level required that the professoriate acquire the requisite knowledge and skills in the teaching process. Schmidt (2008) argues that the professoriate does not necessarily need to focus on pedagogy training alone to impact on the teaching learning process. It therefore means that for university lecturers, bias should be on andragogy in their teaching qualification because university students are adults, and their needs differ from those in secondary and primary schools.

Participant D had the following to say;

> *"... There is need for lecturers to be trained teachers rather than being lecturers by merely possessing a qualification in a particular field. There is also need for university teaching qualification to be different from the primary and secondary school teaching qualification. However, the current status quo seems to treat the two levels of education with the same teaching qualification. This therefore necessitates a qualification that is in sync with the demands of adult learners in universities. One way of doing this is to have a specialisation during studies of the post graduate diploma in education so that one can specialise in andragogy or pedagogy. If not possible, then there should be an additional qualification in andragogy specifically for university lecturers. This is because the post graduate diploma in education covers the basics of both pedagogy and andragogy but does not get into the deeper details of the two which is something that the university teacher should be equipped with."*

The line of argument by participant D shows that importance should be attached to training lecturers in andragogy. This is also highlighted by Kapur (2017) who observed that university lecturers in India are now mandated to undergo training in andragogy for the purposes of facilitating non-traditional students. This is also supported by Berret (2012) who underscores the need for lecturers to understand the process of how adults learn best and how the teaching-learning should be managed.

For participant G the process of capacitating university learners entails the following;

> *"...If the university community is made up of traditional and non-traditional adult learners, it is imperative that the focus of lecturer training be on andragogy. However, it does not mean that pedagogy must not be taught because there are certain contexts in which it is applicable. In many countries of the developed world such as Britain, Greece, Russia, Germany, Norway, Denmark, Sweden etc. there are colleges and universities of andragogy for the purposes of capacitating university and college lecturers."*

The above line of argument by participant G also puts much emphasis on lecturer training but with a bias towards andragogy. This is because the lecturers' qualifications must be of high-quality owing to the difficulties and obstacles in adult learning. So, the teacher must be able to coordinate and facilitate the educational process and at the same time being an educational consultant of the learners. The versatile role requires the able capacity of the facilitator throughout the teaching-learning process. The facilitator also should guide adult learners regarding their educational obligations cognisant of their competing and conflicting interests (Giannoukos *et al.*, 2016).

In line with criterion 5 (the sequence of the mixed analysis), the quantitative responses from the 78 respondents show that 55 respondents concur with the views of participants A, C, D and G that the university lecturers need to be trained in teaching rather than mere qualification in a particular discipline. They argue that a post graduate diploma in higher education would suffice (criterion 13; cross over nature of analysis and criterion 6; the interaction level of qualitative and quantitative analysis). The views of the qualitative participants are also shared by 18 respondents from the quantitative strand (criterion 5; sequence of mixed analysis) that teaching qualification for university lecturers should be more inclined to andragogy rather than pedagogy though the two concepts must be taught in the post graduate diploma in education. They argue that an andragogical qualification in addition to the post graduate diploma in education is necessary for the competence of lecturers. The generalisation of the arguments (criterion 11; the nature of generalisation) as considered together with criterion 9 (link to other design components) and criterion 10 (research process phase when all analysis decisions are made) would then imply that for effectiveness, efficiency and efficacy, it is mandatory that university lecturers possess a teaching qualification which is different from that of teachers teaching in secondary schools. The post graduate diploma in higher education should have a specialisation in andragogy for university lecturers so that they go beyond the basic aspects of andragogy. Another way would be to attain a postgraduate diploma in higher education then in addition have a purely andragogical qualification preferably a diploma. This argument is in sync with previous arguments under the comparative impact of pedagogy versus andragogy theme which put the latter on the upper role in the complementary continuum in institutional learning (criterion 13; cross over nature of the analysis).

Among the themes that emerged from the data gleaned from the participants include a lack of vibrant and up to date virtual learning. In this regard, participant I had the following;

> *"…Our institutional model has been exposed as one which is rooted in the traditional four walls where learning must be done in the physical classroom. Yes, we can talk of needs analysis and other aspects that need to be addressed for the connoisseurship of teaching learning in institutions of higher learning but our model is one that has been exposed as*

Larson (2002) defines traditional institutional learning as teacher-centred instruction of synchronised and scheduled groups, confined in the classroom while virtual learning is student-centred, and asynchronous where learning can take place anywhere and anytime. The traditional type according to participant I is characteristic of Zimbabwean university learning. Sauer (2001) describes virtual learning as that which adjusts to environments and situations. The advancement of e-learning or virtual classroom is seen in most leading countries to meet the developmental needs of those countries in times of crises where students cannot be confined to the four walls (Panyajamorn *et al.*, 2018). This aspect of being adaptive to evolving situations and pandemic is the one that participant I is advocating for in the Zimbabwean institutional model. However, one problem that e-learning experiences is the inability and unwillingness of students, the institutions and the government to adapt to computer-led learning The other problem which could be related to government commitment is that of lack of e-learning equipment, such as the computers themselves and fast internet (Sanchez-Gordon & Luján-Mora, 2014). The other problem is the lack of relevant skills in computer literacy (Randy, 2011) which could be attributable to government commitment to a computer-literacy nation.

According to Panyajamorn *et al.* (2018), a learning model in virtual learning must be an interactive one to be effective rather than the usual non-interactive. The meaning that can be inferred from the above argument is that there is need to have a learning model that embraces e-learning in a very interactive mode such as Skype, WebEx, and Moodle etc. So, the issues to do with adopting e-learning have got everything to do with government decisions on the model of learning that it wants adopted in institutions. The argument of participant I also confirms the need to embrace heutagogy which according to Blaschke (2012) is net-centric implying the use of the internet as a technological self-directed resource centre.

One of the issues that was raised in the study that negated the effectiveness of institutional teaching learning and effectiveness of adopted models was the non-consistency of promulgated policies. To this end, participant E had the following to say;

> *"… There is a serious lack of consistency when it comes to educational policies in the country. I am not sure whether it is politicisation of policies or what because there are so many policies not only in the educational sector that have been abandoned prematurely. I also think that whilst it is good for a country to be reactionary to contemporary educational and developmental trends, there is need for a thorough analysis before coming up with policies so that they are functional. Deviating from education, an example of unpopular policy would be the indigenisation act while in the education sector we can talk of the new curriculum etc. There are also some policies that are functional but are not implemented*

> *because of political orientations. We cannot condemn the British education system in totality today, yet it is the one that has brought us this far. We cannot then opt to get rid of it, yet development was there rooted on the same education system during the colonial era."*

The use of education for political expedience to the detriment of development as outlined by participant E is also echoed by Hove & Ndawana (2019) who argue that since 1999, the Zimbabwean education system has been manipulated by ZANU-PF for political interests through the extensive and compulsory study of History and National Strategic Studies (NASS). Whilst the argument behind this SED was to inculcate patriotism, the authors argue that it was a reactive directive towards the MDC formation. However, if History and NASS are necessary in the educational discourse, is there consistency between this directive and Education 5.0 which participants A and H argue as having relegated humanities in favour of STEM (criterion 9; link to other design components and criterion 13; cross over nature of the analysis). The implication that can be drawn from this is that there is no follow through when it comes to policy formulation and implementation but rather reactionary policies that may not sustain the educational and developmental discourse in the long run.

In the same context of policy inconsistency, participant F had this to say;
> *"… I can describe educational policy formulation and implementation as a 'destroy and build new' phenomenon. There is need to build on already existing educational structures rather than a complete revamp. This allows us to single out shortcomings and proffer solutions to those shortcomings rather than bringing completely new things. I think Education 5.0 and other directives such as the New Curriculum are pointers to the 'destroy and build new' syndrome. This could be due to the turnover of staff in key educational ministries where those that assume office would strive to leave a mark. The Dr. Dokora controversy on National Pledge is one other example."*

The line of thinking of participant F resonates with that of participant C who bemoaned the abolishment of the British F- system (criterion 13; cross over nature of the analysis). The implication therefrom is that educational policies should complement or be incremental rather than to destroy existing ones. In his response to American traditional education, Dewey (1938) cited in Williams (2017) came up with progressivism but did not condemn the traditional system in totality. The implication is that the American education system has been on a continuous improvement which is something that the country needs to emulate for an effective and efficient model of learning.

The chapter presented data in textual form in line with the dominance of qualitative paradigm over the quantitative paradigm. The voice of the questionnaire respondents consisted of both statistical and qualitative flare because of the nature of the questionnaire that was administered. In this vein, the qualitative dominance was

further extended from the in-depth interviews to combined questionnaire responses. The researcher established from the participants the contextual effectiveness and efficiency of pedagogy and andragogy in the design and delivery of instruction in institutions of higher learning. The complimentary nature between MBKs and learner needs was also established whilst views on a more pragmatic absolute model of institutional learning were brought to the fore. The chapter also looked at the effect of SEDs on the choice of models to be adopted in institutions of higher learning and emphasis was put on the value and effect of Education 5.0. Lastly, the perceptions of the professoriate and students were gleaned as to what generally constitutes the connoisseurship of teaching in higher education institutions with regards to the qualifications of the professoriate. Data that was presented first was gleaned from the in-depth interviews (n=10) and was followed by data gleaned from combined questionnaires (n=78) in line with the sequential exploratory design. The analysis followed Thematic Analysis (TA) and 13 steps of mixed analysis by Onweugbuzie & Combs (2010) and Teddlie & Tashakkori, (2011). The next chapter looks at the summary, conclusions and recommendations.

CHAPTER 5:
Ubuntugogy- Ergonargy-Humanagogy-Heutagogy- (UEH2) Model

The chapter provides a summary of the study highlighting the key findings and drawing relevant conclusions from the findings. Recommendations as well as implications for further study are also drawn.

The study arose because of the conflicting views amongst lecturers and students on the impact of pedagogy versus andragogy in institutional programmes. The study paid particular attention to the effectiveness, efficiency and efficacy of pedagogy versus andragogy in the process of design and delivery of instruction. This was done through answering research questions related to the aspects of learning that must be addressed by an effective model, the impact of minimum bodies of knowledge on learners and development, the effect of strategic educational directives on the choice of institutional model to be adopted and the perceptions of the professoriate and students on the impact of pedagogy versus andragogy. The study also interrogated the possibility of an absolute model of institutional learning. The study entailed a mixed method paradigm in which data was collected through in-depth interviews and questionnaires. The population of the study was the University of Zimbabwe lecturers and students, and the sample was drawn from the Faculty of Education. The purposive sample size was 10 (n=10) while the random sample size was 80(n=80) and the total response rate was 97.8%.

The following were the major findings of the study:

 Pedagogy and andragogy have got contextual effectiveness and complement each other throughout the design and delivery of instruction in institutional learning.

 The current institutional model of learning falls short of addressing the requirements of educational effectiveness and developmentalism.

 Minimum Bodies of Knowledge (MBK) cannot be solely relied on for effective learning and holistic development.

 Strategic Educational Directives (SEDs) such as Education 5.0, STEM and New Curriculum determine the choice of model to be adopted in institutional learning.

 Education 5.0 provides a directive to institutions to adopt a more pragmatic, work oriented, research oriented and innovation-oriented model. However, the philosophy needs further refinement so that each and every discipline knows its role within the framework of research, teaching, community engagement, innovation and industrialisation. This would entail having all the university faculties on board without the latter

relegating their core business. Development should not be defined as the quantitative aggregation of goods but need to be defined in terms of knowledge given to the students and society that is necessary for survival.

☐ Universities have produced graduates who are not competent in the industries and have perpetuated theorisation of concepts some of which are not relevant to the Zimbabwean development discourse. This is despite the introduction of Education 5.0. This has been due to the continued use of teaching methodologies rooted in Education 3.0 that do not promote practical orientation on students.

☐ The effectiveness, efficiency and efficacy of the institutional model is negatively affected by lecturers who do not have teaching qualifications.

☐ The present institutional model of learning has had little emphasis on the promotion of virtual learning indicating the absence of a net-centric model (heutagogy). Emphasis has remained on the traditional classroom setting rather than interactive e-learning. Where e-learning has been promoted, it has not been interactive to include virtual face to face through such platforms as WebEx, Moodle and Skype etc.

☐ There is inequitable distribution of teaching and learning opportunities for women in institutions of higher learning.

Basing on the findings from the study, the following conclusions were made:

Neither pedagogy nor andragogy is the most impacting model. The two complement each other along the continuum and their effectiveness is contextual depending on the level of design and delivery, the subject being taught, the level of study, the nature of students whether traditional or non-traditional and their level of comprehension. It therefore calls for programme designers and lecturers to blend the two models in the design and delivery of instruction. There is also need for a thorough understanding of these concepts to employ them where they can impact best.

The current institutional teaching-learning in Zimbabwe is more theoretically oriented rather than being practically oriented. The theorisation arises from the lack of understanding and appreciation of Education 5.0 by both lecturers and students where both constituencies have continued to teach and learn in Education 3.0. There is need to conduct more workshops on Education 5.0 for both students and lecturers as well as funding universities so that they embrace teaching methodologies that are consistent with Education 5.0. The blending of theoretical models such as pedagogy with practice-oriented models like andragogy would definitely go a long way in producing a holistic and effective model of institutional learning. In addition, efforts must be made to understand and implement ubuntugogy, humanagogy, ergonargy, heutagogy and other practically oriented models.

The connoisseurship of teaching in universities and colleges hinges not only on the adopted model but on the level of training of the professoriate. University students are mostly adults, be they traditional or non-traditional, they require good lecturers who understand their needs as adults. The competing and conflicting interests of adults, their self-concept, orientation to learning, readiness to learn, the value of experience and their motivation are aspects that require special training. To this end, the employment of lecturers that do not have teaching qualifications and are not grounded in the teaching-learning of adults has affected educational effectiveness in most institutions.

Education 5.0 is a model whose narrative is production-oriented learning through research and innovation. However, the model seems to prioritise sciences as the panacea to development leaving out the role of humanities that are also necessary for human, political, social and cultural development. In this regard, Education 5.0 should cease to compartmentalise education and should look beyond economic development.

There is little emphasis on virtual learning in Zimbabwean institutional learning. There is need to adopt and implement face to face interactive e-learning.

The production of MBK has not been thoroughly done and in most cases has not included all the relevant stakeholders. In addition, the curriculum has been taking long to be reviewed to keep pace with the learner demands and developmentalism. To this end, the effectiveness of institutional learning would depend on whether all stakeholders were included in coming up with the MBK. It would also hinge on how frequent the MBK are reviewed to keep pace with current learner, society and developmental needs.

Basing on the findings of the study and in view of the conclusions made, the following recommendations were made:
Institutional design and delivery of instruction must be done in consultation with all the relevant stakeholders, that is the learners, the society, the industry, the government and others. At system level factors, the government must provide guidance with regards to a national education philosophy which promotes functionality of learners as individuals and as members of the society. At the institutional level factors, universities should also conduct micro-needs assessment at their level so that the needs of those that are actually participating in the programmes are factored in. The institutions should also make constant Community Engagement (CE) to factor and address the concerns of the society. For the classroom factors, the professoriate should alternate teaching methodologies depending on the best teaching moments of each method.

(UEH2) Model should be adopted and be used as a framework for the development of a more holistic and pragmatic model that can withstand the test of time;

UEH2 Model of Institutional Learning in Higher Education
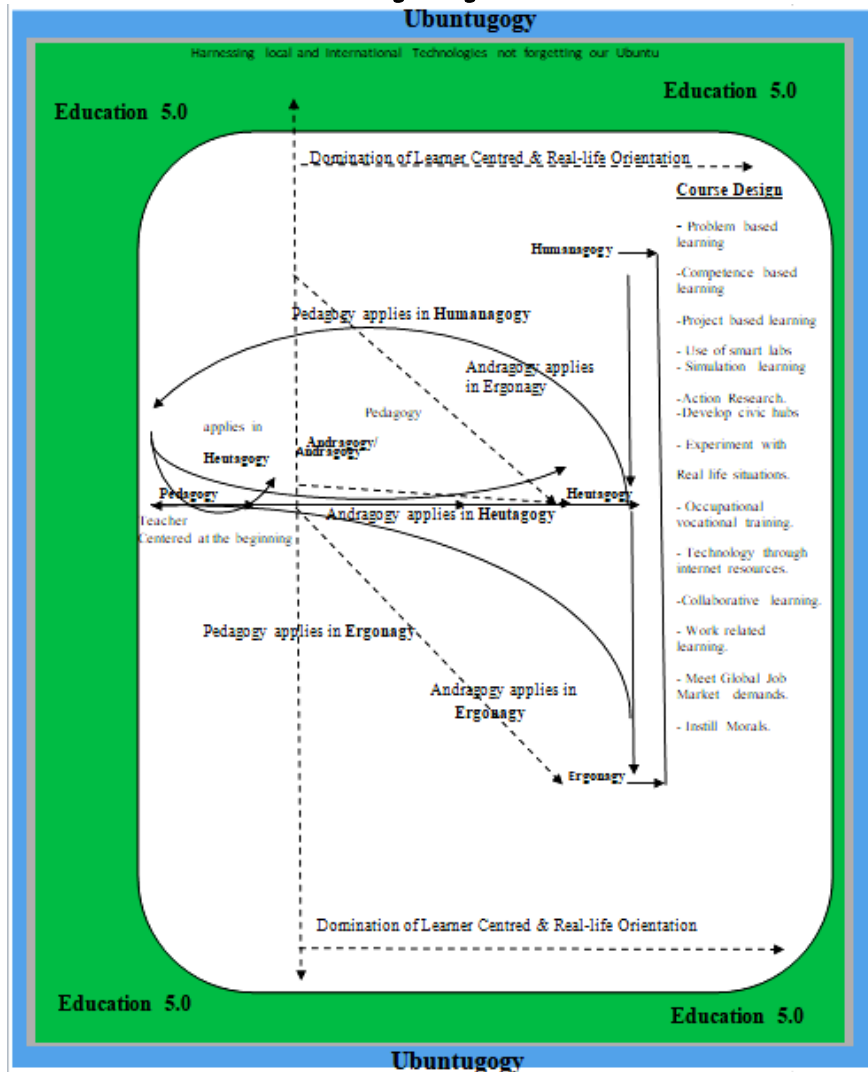
a) Institutional learning is not mechanistic or linearistic but fluid. Thus, an ideal model should operate within the overall confines of Education 5.0. Whatever, the teaching-learning, *ubuntu* must come first. This makes Ubuntugogy the overarching model. The teaching-learning must be work related, thus Ergonagy and this must be done within the principles of complementary andragogy and pedagogy (Humanagogy). There needs to be blended learning that involves industry based, collaborative learning, problem and project-based learning. The teaching-learning must be situated in the community and there should be wide use of technology that involves net-centric learning (Heutagogy). This then forms a non-mechanistic model of Ubuntugogy-Ergonagy-Humanagogy-Heutagogy (UEH2) which to a greater extent speaks to the dictates and outcomes of Education 5.0.
b) The process of Educational Systems Planning (ESP) is interwoven, over-arching and complementary from needs analysis to evaluation.
c) Institutional learning begins with teacher centred approach, progresses in a continuum to self-directed to self-determined to competence related and to work related learning. All models are at play during these processes but some would assume an upper role at given contexts, academic level and time. Institutional learning is informed by the dictates of Education 5.0 whereas the latter is informed by the national education philosophy of Ubuntugogy and Professional Philosophy (Combination of Afro-centric and Euro-centric philosophies for functional overlaps).

It is also recommended that the parameters of Education 5.0 be reviewed to accommodate real and total development.

The researcher further recommends that university lecturers must compulsorily be trained in andragogy. In this vein, it is also the recommendation of the researcher that all universities should establish Centres for Andragogy/ Life-long Centres that would train the lecturers and oversee the design and delivery of instruction in university learning.

The research on the comparative analysis of the impact of pedagogy and andragogy as means for instructional design and delivery in institutional programmes needs to be conducted at multiple universities to increase the sample size, ensure the diversity of the participants as well as gaining insights into the varied perceptions of the participants across different institutions.

Further study should also be done across different faculties with regards the impact of pedagogy versus andragogy to bring to the fore the circumstances that may determine lecturers to adopt a particular model to the betterment or detriment of effectiveness, efficiency and efficacy.

Further research is needed to consider the feasibility, effectiveness and efficiency of UEH2 as a model of institutional learning.

Research is needed to look into the feasibility and importance of establishing Centres for Andragogy/ Life-long Centres in all universities.

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