THEORETICAL FRAMEWORK: AN INVESTIGATION INTO TRANSVERSAL COMPETENCIES AMONG PAKISTANI UNDERGRADUATES

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Abstract

Theoretical framework is indispensable for a research study to ground it in theoretical constructs. The purpose of the present study was to develop the theoretical framework for a mixed methods study on transversal competencies. The strategies of developing the theoretical framework were followed including: alignment of research problem and title of the study; key variables of the study; review of the literature; relevant variables of the study; selection of theory(ies) which can best explain the key variables of the study; discuss the propositions of the selected theory and point out their relevance to your research. The theory of Zone of Proximal Development by Vygotsky (1978) in alignment with Constructivism paradigm was selected to understand and explain the transversal competencies as the key variable of the present study. A Theoretical Framework of TVC for Lifelong Learning was developed. It defined the key variables of the study including: departmental, pedagogical and institutional strategies to analyze and interpret the data to be gathered, understand the variables in view of definitions, and build knowledge by validating or challenging theoretical propositions: MKO, Contextual aspect, Social aspect, Personal aspect, and Scaffolding. It was a framework to not only interpret the new research data for future but also a response to new problems for identifying strategies. It was significant to limit the scope of the study by focusing on the key variables.

Keywords: Mixed methods research design; Theoretical Framework of TVC for Lifelong Learning; Transversal competencies; Zone of Proximal Development.

Introduction

A theoretical framework is a blueprint to guide a research study as it consists of theoretical principles, constructs, concepts and tenants of theory (Osanloo & Grant, 2016, p. 17). Labaree (2021) states that it provides structure to hold or support a theory in a research study besides introducing and describing the theory, which justifies the research problem under study. The purpose of theoretical framework explains the meaning, nature, and challenges of a phenomenon to use that particular knowledge and understanding to execute effectively.

The selection of theoretical framework required "a deep and thoughtful understanding of your problem, purpose, significance, and research questions", their alignment, and intricate interconnection (Osanloo & Grant, 2016). It was particularly significant to use theoretical framework as the foundation of research study which could guide the selection of research design and data analysis.

The presentation of theoretical framework was advocated differently by researchers. Graphic presentation was advocated by some researchers (Marshall & Rossman, 2016; Maxwell, 2013; Merriam & Tisdell, 2016; Miles et al., 2014; Robson & McCartan, 2016) as a pictorial portray of the theoretical framework provided better understanding. Likewisely, narrative presentation was supported by Ravitch and Riggan (2017) as they preferred text-based presentation for research design, data collection, data analysis and findings. However, Crawford (Burkholder et al., 2019) argued for a narrative presentation accompanied by graphic presentation, as graphic presentation was perceived to present an organised picture whereas narrative presentation could clarify the key concepts.

Research Question

1. What is the theoretical framework of the mixed methods study on transversal competencies among BS English undergraduates in Punjab, Pakistan?

Literature Review

Transversal competencies among learners facilitates acquisition of knowledge, skills, values, and attitudes besides enhancing abilities to apply knowledge and skills in a given situation or context (Halinen, 2018). United Nations (2019) has been striving to find "practical ways to improve access to quality education and lifelong learning and deliver genuine impact both on people and sustainable development (p.12).

With regard to fostering knowledge, skills, values, and attitudes among learners, the theory of social constructivism served as a theoretical foundation for the present study. Social constructivism by Vygotsky (1898-1936) is a learner-centred theory in which learners have the opportunity to engage in social activities to construct their knowledge. Vygotsky (1978, p. 86) proposed the Zone of

Proximal Development (ZPD) to investigate the ways for acquiring new knowledge and skills by learners. ZPD was emphasized as "The distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers". It was stated that social interactions led to cognitive development by guided learning; as ZPD implied a range of skills performed by a learner initially with the assistance of a teacher or peer with better knowledge skills. These skills were called 'proximal' as a learner mastered them to perform independently (Cherry and Swaim, 2020).

UNESCO (2015a) proposed the framework of *Five Domains of the ERI-Net Working Definition of Transversal Competencies*. The five domains included: critical and innovative thinking; interpersonal skills; intrapersonal skills; global citizenship; media and Information literacy; and 'others. It was noteworthy that each domain was generic with the opportunity for researchers to modify it according to their national or local contexts (p. 18). In the perspective of pivotal role of transversal competencies in holistic learning, many education systems incorporated transversal competencies in their national curricula. Different countries defined the transversal competencies in their context according to their national education policies. An analysis of the definitions of transversal competencies by different countries revealed similarities, differences and overlaps.

The education system in Finland was considered very successful. According to National Core Curriculum for Basic Education (2014, p. 21-26) in Finland, there were seven interconnected transversal competencies of basic education on the basis of: four value pillars, seven development principles of the school culture, and the conception of learning. They include*: Thinking and learning to learn; Cultural competence, Interaction and expression; Taking care of oneself, managing daily life; Multiliteracy; Digital (ICT) competence; Working life competence, entrepreneurship; and Participation, involvement, building a sustainable future.* The purpose of incorporating them in the core curricula was "to encourage students to recognize their uniqueness and their personal strengths as well as their potential for development in all of these areas of competence, and to appreciate themselves". These competencies were incorporated in the objectives and main content areas of the compulsory subjects. Moreover, the subject descriptions also highlighted the interconnection between the objectives of the subject and the transversal competencies (Halinen, 2018, p. 85). Further, in Finland, the focus of attention was diverted from the phrase 'implementation of the curriculum' to "teachers who construct their own professional guidelines based on the local curriculum. They are the ones who bring the curriculum into reality" (Halinen, 2018, p. 87).

A document analysis report on "Transversal Competences: Their Importance and Learning Processes by Higher Education Students" (Sá & Serpa, 2018) highlighted the implication of acquiring transversal competencies in higher education. The findings of the study revealed that attitudes, prospects and inclinations were critical elements for attaining transversal competences. It was important with reference to gaps between students' expectations for the accomplishment of competences in higher education and the proposals to plan their training at the micro, meso and

macrosocial levels; in the perspective of the attainment of transversal competences in higher education for granted.

At national level, National Education Policy Framework (GoP, 2018) reported that Pakistan was facing serious challenges in tertiary education due to significant skills shortages and mismatches produced by HEIs. It was far behind its South Asian competitors as it was ranked 125th out of 140 economies on the "Global Competitiveness Index 2018" (GoP, 2018, p. 4). The key factors include: "a) a lack of clarity on the roles and functions of key skills and HEIs; b) a shortage of qualified faculty; c) outdated curricula, inadequate and often insufficient teaching learning materials and resources; d) a lack of competency-based training and assessments; e) weak linkages with employers to be aware of their needs; and f) weak linkages between the public sector and the private sector as a whole".

With reference to the concerns regarding undergraduates' competencies in Pakistan, the *Undergraduate Education Policy 2020* of Higher Education Commission (HEC, 2020) Pakistan provided "the objectives and policy for Undergraduate Education". The first objective of this policy was "Competency-Based Learning" with four components:

> Knowledge (disciplinary, interdisciplinary, epistemic, and procedural), skills (writing, oral communication, ICT-related skills, quantitative analysis, analytical and problem-solving skills, critical and creative thinking, and learning to learn), professional behaviour (self-regulation, time management, integrity, intellectual curiosity, intellectual openness), and interpersonal attributes (empathy, self-efficacy, collaboration). (p. 1)

In addition, the fourth objective was *Applied Knowledge* "to prepare students to apply the acquired knowledge and skills to life's challenges", and the fifth objective was *Emphasis on Creativity* "to foster exploration, curiosity, discovery, and creativity amongst students" (HEC, 2020, p. 1).

It was evident from the review of literature at international and national levels that transversal competencies were considered vital for empowering learners with lifelong learning skills in the rapidly changing global world. As "the speed of change and our inability to adapt by learning new skills are the biggest threats to the survival of our species. It is the acquisition of new competencies which will determine whether, and how, we survive" (Heron, 2019, p. 4). In this regard, the definition of transversal competencies in curriculum was identified as a gap in Asia-Pacific region countries by UNESCO (2015a). The present study was an effort to address this gap by proposing the definition of transversal competencies for BS English Curriculum (HEC, 2017) in Pakistan as a member country of Asia Pacific region.

Prevalent Frameworks on 21st Century Skills

Frameworks of TVC offered a vision and a set of underpinning principles for an education system by presenting the types of competencies required by students to move towards the future individually

and collectively (OECD, 2019, p. 16). Their scope was broader as they offered opportunities to stakeholders to take a holistic view of what students needed to learn as well as reflect on the curriculum by comparing it with those of other countries (OECD, 2019). A number of frameworks were developed independently around the world to predict TVC for future (EU, 2017; OECD, 2019).

Figure 1.1 shows *PISA 2030 and CCI Frameworks* (OECD, 2018, P.4). It presented a framework "comprising knowledge, skills, attitudes and values, intertwined and applied for action" for measuring these competencies in Programme for International Students Assessment (PISA). This framework provided PISA 2030 Vision as: 'Knowledge' comprised disciplinary knowledge, interdisciplinary knowledge, and practical knowledge; 'Skills' comprised cognitive and meta-cognitive skills, social and emotional skills, physical and practical skills; and 'Attitudes and Values' reflected the required approaches and behaviours for lifelong learning.

Figure 1.1: *PISA 2030 and CCI Frameworks*


Figure 11: OECD PISA 2030 Vision

Figure 1.2 shows *Conceptual Framework for Skills in the 21st Century* (Whittemore, 2018) "demonstrated how transversal competencies are both underpinning core qualities and applied transversal capabilities". The 'Core' competencies acted as building blocks for implementing 'Applied' and 'Specialist' domain level expertise which depended on their solid foundation (p. 40).

Figure 1.2: *Conceptual Framework for Skills in the 21ˢᵗ Century*

Figure 12: Conceptual Framework for Skills in the 21ˢᵗ Century, S. Whittemore 2017

Figure 1.3 shows the *P21 Framework for 21ˢᵗ Century Learning (Whittemore, 2017)* with its elements. In this regard, Partnership for 21ˢᵗ century learning (P21) as a premier organization developed a framework for 21ˢᵗ century learning to "define and illustrate the skills, knowledge, expertise and support systems that students need to succeed in work, life and citizenship". Its vision was to "ensure students success in a world where change is constant and learning never stops" (P21, 2016, p. 1).

This framework was expected to prepare students "to thrive in today's digitally and globally interconnected world" by incorporating it in five support systems including: "standards and assessments, curriculum and instruction, professional development, and learning environments" (P21, 2016, p. 1). Its basic components included: "Key Subjects and 21ˢᵗ Century Themes, Learning and Innovative Skills, Information, Media and Technology Skills, and Life and Career Skills". So, *Key Subjects and 21ˢᵗ Century Themes comprised* "Global Awareness; Financial, Economic, Business and Entrepreneurial Literacy; Civic Literacy; Health Literacy; and Environmental Literacy". *Learning and Innovative Skills* comprised: "Creativity and Innovation: Critical Thinking and Problem Solving; Communication; and Collaboration". *Information, Media and Technology Skills* comprised: "Information Literacy; Media Literacy; and ICT Literacy. *Life and Career Skills* comprised: Flexibility and Adaptability; Initiative and Self-Direction; Social and Cross-Cultural Skills; Productivity and Accountability; and Leadership and Responsibility". (P21, 2016, p. 2). The review showed that components were domains of competencies and they were similar to five domains of ERI-NET transversal competencies (UNESCO, 2015a).

Figure 1.3: *P21 Framework for 21st Century Learning*
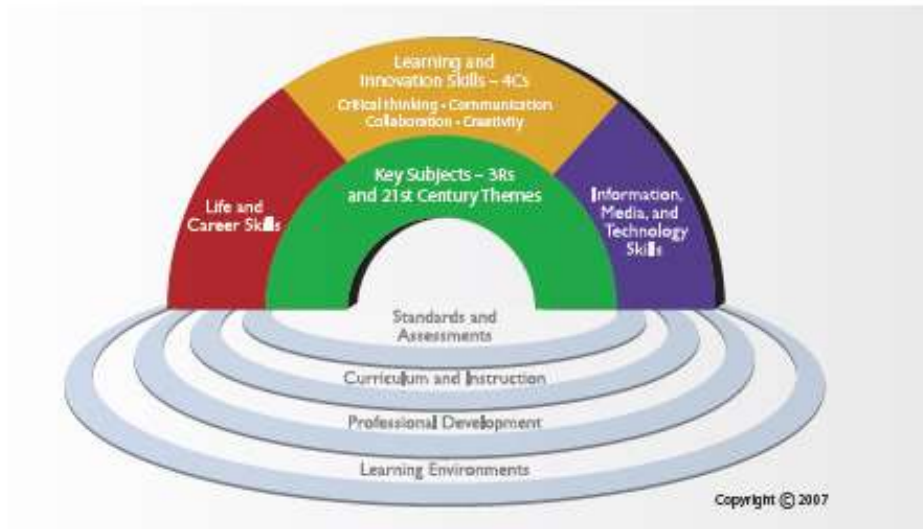
Note: Framework for 21st Century Learning (P21, 2016)

In this context, UNESCO (2015a) proposed a framework on TVC with five domains in Phase I project. It was reported that the operational definition of transversal competencies catered not only skills, but also values, attitudes and beliefs.

Table 1.1: *Five Domains of the ERI-Net Working Definition of Transversal Competencies*

	Domains of TVC	Descriptors of Domains of TVC
1	Critical and innovative thinking	Creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making
2	Interpersonal skills	Communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy
3	Intrapersonal skills	Self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance, self-motivation, compassion, integrity, self-respect
4	Global citizenship	Awareness, tolerance, openness, responsibility, respect for diversity, ethical understanding, intercultural understanding, democratic participation, conflict resolution, respect for the

		environment, national identity, sense of belonging
5	Media and information literacy	Ability to obtain and analyze information through information and communication technology (ICT), ability to critically evaluate information and media content, ethical use of ICT
6	Others	Skills and competencies as defined by countries/ Economies or country specific contextual competencies

Note: Five domains of ERI-Net operational definition of transversal competencies (UNESCO, 2015a, p. 18).

Table 1.1 shows the *Five Domains of the ERI-Net Working Definition of Transversal Competencies* (UNESCO, 2015a). It included: critical and innovative thinking; interpersonal skills; intrapersonal skills; global citizenship; media and Information literacy; and 'others. It was noteworthy that each domain was generic with the opportunity for researchers to modify it according to their national or local contexts (p. 16). Moreover, European Union (EU) supported changes to improve the acquisition of generic transversal competencies in the learning approaches in universities (Laguna-Sánchez, et al, 2020).

An analysis of frameworks indicated that they all defined knowledge, skills and attitudes as key elements of competencies by using different terminologies. They combined sets of different competencies for specific target groups. The 21st century skills including critical thinking, creativity and problem solving was a vital component of all the frameworks. They focused on non-cognitive skills, attitudes or values as vital for lifelong learning beyond cognitive skills (EU, 2018). Moreover, the frameworks revealed the expected descriptors and domains of 21st century skills. At the same time, the need to consider some relevant factors such as role of teachers, education systems, integrated curriculum and resources to develop frameworks of TVC have also been mentioned.

Nevertheless, flexible and adaptable conceptual frameworks may cater the needs of different learning contexts without compromising the quality (EU, 2017, p. 29). In this regard, the concerned international organisations have taken initiatives in the form of projects including: Phase I (UNESCO, 2015a), Phase II (UNESCO, 2016a), and Phase III (UNESCO, 2016b) to identify, define and assess TVC to fulfil the demands of the educational context of their partner countries. The development of conceptual frameworks and models on TVC is ongoing with discussions on teaching, learning and assessment skills to enrich education systems.

The term 'transversal competencies' refers to not only skills, but also values, attitudes and beliefs (UNESCO, 2015a). European Union (2016, p. 5) has reported that they are hard to teach and measure (quantify), as they are related to a person's competence and refer to personality and social interactions. They are considered "a new global human currency, which are going to be embedded

in curricula all over the world in the near future!" (Heron, 2019, p.1). It is noteworthy that the definition of transversal competencies differs 'within and across countries of the Asia-Pacific region, with country-level definitions formed with reference to the social values and political structures particular to each country' (EU, 2017, p. 29). So, they are termed as 'Non-Cognitive Skills', 'Character Education', 'Cross Curriculum Skills or Generic Skills', 'Life Skills, Co-Curricular Skills, Attitudes and Values', 'Zest for Living', 'Key Competencies', 'Life Skills', '21st Century Skills', '21st Century Learning' etc. by Asia Pacific region countries (UNESCO, 2015a). ERI-Net members do not show consensus on a single term for transversal competencies although they are integrated in their curricula (UNESCO, 2015a).

The definitions of transversal competencies in curriculum are the most important tools to implement integrative approach to teaching and learning ((EU, 2017; Halinen, 2018; UNESCO, 2015a; McIlvenny, 2019). Integrative approach to teaching and learning has been considered a very important goal of curriculum as the students are enabled to see the relationship and interdependencies between the academic subjects and life outside the educational institutions (Halinen, 2018, p. 84). So, every student is required to be fostered with the skills and knowledge to survive in the rapidly changing world (Gonski et al., 2018).

In this regard, Phase I project on *Transversal Competencies in Education Policy and Practice Report* recommends that education policies and curricula need to be incorporated with a range of skills and competencies for learners' success; and the curriculum needs to ensure that students develop attributes and skills necessary for a rapidly changing society and workplace (UNESCO, 2015a, p.1). Further, the Sustainable Development Goals (SDGs) form part of the United Nations (UN) "2030 Agenda for Sustainable Development", which was unanimously adopted in 2015 by all UN Member States as a "plan of action for people, planet and prosperity" (Boeren, 2019, p. 277). Hence, "integrating SDGs into education curricula, is important" to foster sustainable and long-term behaviour change in learners (UN, 2019, p. 6). In this regard, incorporating transversal competencies in curricula endorses the SDG 4 for *Quality Education*.

 The investigation of non-cognitive skills in education policies, practices and curriculum frameworks of ten Asia Pacific countries by UNESCO (2015a) reported that these competencies were incorporated more or less in different subjects. In this perspective, the investigation of transversal competencies in curricula of Pakistan as an Asia Pacific country was direly needed to promote the framework of *Five Domains of the ERI-Net Working Definition of Transversal Competencies* (UNESCO, 2015a), and SDG 4 (UN, 2019). As "comprehensive and reliable data is also needed to inform policies and monitor improvements in educational systems to deliver inclusive and equitable quality education and lifelong opportunities for all" (UN, 2019, pp. 12).

Theoretical Framework of the Study

The theoretical framework of the study offered a broader context of the study by connecting the research to the theoretical constructs (Marshall and Rossman, 2011). The present study focused on

transversal competencies of students in the perspective of the three objectives of educational programmes: first, to equip youth with the necessary tools to succeed in the new millennium by accessing content knowledge effectively and acquiring problem solving skills; second, to develop 'creative, collaborative, communicative, and innovative learners' with cultural sensitivity, global awareness, and ethics; and third, to develop digital literacy to keep pace with 'the digital world that offers vast promises' and challenges simultaneously (Kouneiher & Barbachoux 2017, p. 184). The theory of *Social Constructivism* in alignment with the paradigm of *Constructivism* provided the theoretical foundation of the present study.

Paradigm of Constructivism

Constructivism as a paradigm of teaching and learning explained how people might acquire knowledge and learn; and the learner as an active agent in the process of knowledge acquisition. The proponents of constructivism including Dewey (1929), Bruner (1961), Vygotsky (1962), Piaget (1980) and Von Glasersfeld (1995) proposed its numerous implications for curriculum by underscoring that learning outcomes should focus on the knowledge construction process, and that learning goals should determine authentic tasks with specific objectives (Bada & Olusegun, 2015, p. 66). The main sub-divisions of theory of constructivism include cognitive constructivism and social constructivism. An overview of these categories reveals that sociocultural theory by Vygotsky (1896-1934) is more relevant to the present study.

Theory of Social Constructivism

The theory of *Social Constructivism* (Vygotsky, 1978) in alignment with the paradigm of *Constructivism* served as the foundational basis for pedagogical and curricula decision-making in academia. Social Constructivism by Vygotsky (1898-1936) is a learner-centred theory in which learners have the opportunity to engage in social activities to construct their knowledge. Vygotsky (1978) emphasized that "learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (p. 90).

Zone of Proximal Development. The *Zone of Proximal Development* (ZPD) by Lev Vygotsky (1896-1934) provided a sound theoretical foundation to researchers to investigate the ways for acquiring new knowledge and skills by learners. Vygotsky (1978, p. 86) emphasized ZPD as "The distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers". He stated that cognitive development stemmed from social interactions by guided learning within the ZPD learners and their teachers or peers to co-construct knowledge. So, ZPD was presumed as the range of skills performed by a learner initially with the assistance of a teacher or peer with better knowledge skills. Cherry and Swaim (2020) mentioned in this regard that these skills were called 'proximal' as a learner mastered them to perform independently. The main components of ZPD included:

More Knowledgeable Other. *More Knowledgeable Other* (MKO) was a teacher, mentor or peer

with higher knowledge and skills to guide the learner.

Contextual Aspect. *Contextual aspect* implied an academic context with identified learning outcomes to learn and practice knowledge, skills and values till the level of mastery.

Social Aspect. *Social aspect* involved interpersonal skills to observe and practice target knowledge, skills and values.

Personal Aspect. *Personal aspect* involved intrapersonal skills to be motivated enough to practice target knowledge, skills and values.

Scaffolding. Scaffolding included supportive activities to improve knowledge, skills and values with the assistance of MKO.

Hence, ZPD was presumed as a continuously evolving process as it engaged learners in continuously learning new skills by social interactions, to empower them with competencies for lifelong learning (McLeod, 2012). The two important components of ZPD included: "the student's potential development and the role of interaction with others" (Kurt, 2020, p. 2). It implied that learning could occur in Zone of Proximal Development after the identification of current knowledge whereas the potential development determined the students' capability of learning.

However, ZPD by Vygotsky has not been fully assessed yet, as many reports became available for study relatively recently (Van der Veer & Yasnitsky, 2016). So, the applicability of ZPD has not been discussed regrading undergraduates' transversal competencies in Pakistani educational settings. The significance of model of ZPD for undergraduates' empowerment as lifelong learners and its implications for curriculum needed to be investigated for better understanding. As, ZPD was cyclical, contextualized and holistic; it was consistent with the variables of the present study.

Since TVC could not develop in a vacuum; interaction at personal and social level in a particular context is inevitable to foster them in learners. The alignment of key elements of ZPD including personal and social interaction of learner with a More Knowledgeable Other (MKO) in a particular context to enhance the current knowledge, skills and attitudes of a learner to their 'proximal' potential, with the (academic setting of undergraduates at university level) provided a rationale to use it as a theoretical framework of the present study. ZPD entailed gradual transition from a dependent learner with lower order thinking (LOT) to an independent learner with higher order thinking (HOT) by the assistance of MKO who could be teacher or a peer (with higher abilities).

 It was notable that ZPD as a theoretical framework required 'integrated curriculum' (Schunk, 2012, p. 231) with an equal emphasis on acquiring knowledge, skills and attitudes/values. Hence, ZPD served as a theoretical foundation to address the contradiction between the current policies of HEC Vision 2025 (HEC, 2016) with emphasis on knowledge, skills and attitudes for holistic learning, and practices with more emphasis on cognitive domain (factual knowledge) (Wass, Harland & Mercer, 2011) as well.

Figure 1.4: *Theoretical Framework of TVC for Lifelong Learning*
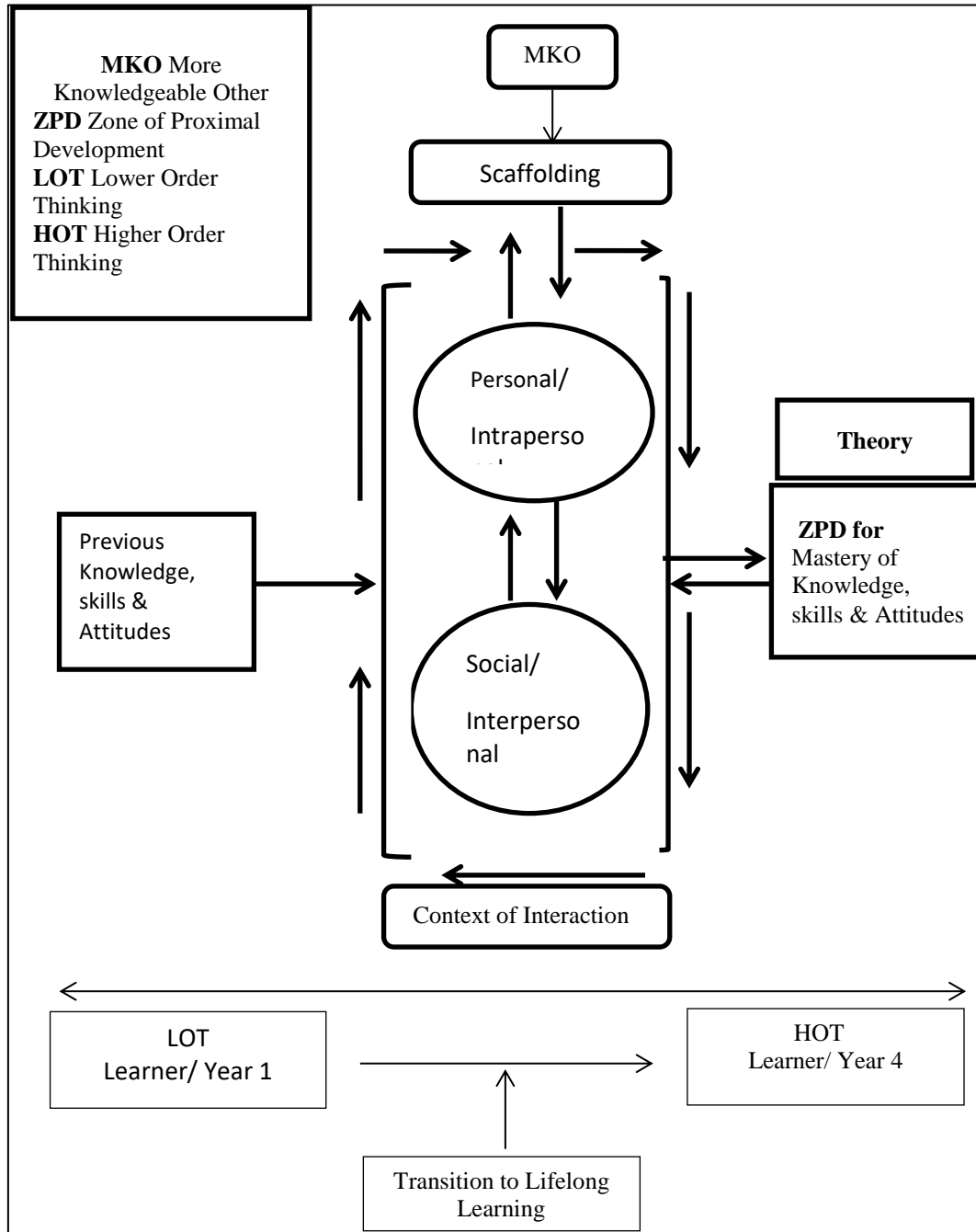
Conclusion

It is concluded that the theoretical framework is drived from the existing theory (ies) relevant to the research topic. A research study with the theoretical framework facilitates the analysis of the data. The present study revealed two critical aspects of ZPD as: the potential development of the learner, and the role of interaction in the learning process.

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