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Full Length Research Paper

Reimaging of basic education; panacea for catalyzing change for inclusion and access during pandemics

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The worldwide health epidemic has glinted serious challenges on the vulnerabilities. However, on the other hand it has given a glimpse of existing disparities and a wakening call on what mitigations are needed to be considered. At the top-most is the need to address the education of over one point five billion learners whose education has been interrupted due to the COVID-19 crisis. As the world globally navigates the COVID-19 catastrophe and its repercussions, there is need to reflect on fundamental principles and identified strengths, while contenting with unprecedented distraction to economies, education and societies. Distractions occasioned by the epidemic are aggravating disparities both inside and across nations. We promptly need reimaging of education so that short-range impediments do not translate into bigger, lifelong challenges. To this end, renewal and reimaging of education takes center stage. This premise is anchored on global solidarity and EFA goals that do not condone the echelons of inequalities that have emerged in the modern-day world. Methodologically, secondary data and purposive random sampling was utilized to review articles that were concerned with reimaging of basic education. Drawing from the Covid-19 relevant experiences and relevant theories, this study established that Covid-19 experiences heightened disparities, accentuated the threats that arise due to privatization of education being a common good coupled with unpreparedness for immense change to virtual learning platform. The study recommends interventions meant to promote inclusive learning to minimize disparities for the vulnerable learners and assist various countries to realize their already initiated 100 per cent transition policy. Significantly, the study contends that reflections on renewal and reimaging of education may prove fruitful towards catalyzing change for inclusion and access during epidemics to the advantage of our learners

Key words: Reimaging, education, catalyzing, change, inclusion, access.

INTRODUCTION

COVID-19 has occasioned numerous prevailing trends and patterns distinctively experienced globally (Amujiri et al., 2021). To the extreme, we have been treated to numerous weaknesses and susceptibilities: these entail

accentuated disparities, threats that arise due to privatization of education being a common good, unpreparedness for immense change to virtual learning (Marginson, 2016; Toquero, 2020; Tawil and Locatelli,

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2015). Conversely, positive facets within our social order have also been made progressively noticeable. We are noticing camaraderie spirit and a robust, buoyant response to challenges in several countries and continents. We are witnessing augmented commitment to the public good. Further noticeable is ingenuity, dedication and inventiveness emanating from various educators, learners and families who are collaboratively fostering outstanding learning experiences (UNESCO, 2020). COVID-19 is perilous to public education, with threats of disintegration and detachment as we are bound to lose both educators and learners who might not make it to institutions as they slowly reopen. Some level of privatization ensues when learning relocates from institutions into homes (Toquero, 2020). It is the view of many stakeholders that the recent alternative measures should be transmuted into lifelong reforms. Nevertheless, it is noticeable that several stakeholders have now appreciated educators' work. Many communities are becoming conscious of the diverse roles that institutions play in facilitating the welfare of learners, and in guaranteeing health and sustenance, in conjunction with academic business (UNESCO, 2020). This augmented consciousness and appreciation needs to be the starting point for revitalization of education as a public good (Marginson, 2016). The epidemic has compelled immense change from the traditional teaching and learning set up characterized with physical exchanges. This is a big challenge for learners enshrined in abject poverty globally, who frequently depend on the physical institutional set up to offer educational resources, meals, guidance among other valuables (World Bank, 2020). While in their homes learners can encounter several forms of violence and abuse. Scarcity of resources, mainly digital gadgets and connectivity, imply that the cost of education and general welfare will soar for vulnerable groups. As for learners in higher institutions of learning; practicums and internships were put on hold, however those who had resources continued with minimal interruptions. These are the challenges that must be addressed urgently, lest drawback propel more drawbacks (World Bank, 2020). As we think on how to revitalize education, welfare and interaction ought to be given precedence. The digital technology that facilitates collaboration, and virtual learning is a worthwhile measure, not a remedy nonetheless a welcome invention and evidence of capabilities in mitigating our challenges. Despite this progress there is a concern that changes to virtual learning will aggravate disparities in many of the Sub-Saharan Africa states and even in the many sound economy states. We ought to ascertain that digitalization doesn't weaken privacy, curtail freedom of expression, influence offensive surveillance among other vices. It is a fallacy to imagine that virtual learning is a panacea for all (Cullinan et al., 2021).

To protect the right to education amidst the unusual conditions fashioned by the epidemic, and to build trust

needed for worldwide collaboration in marshaling resources to guarantee right to education for all (Cullinan et al., 2021). All education stakeholders need to ensure that education resources are utilized for the intended aim of enriching the potential of learners. Of great concern which calls for enhanced vigilance is corruption to deter the seizure and digression of education resources towards self-gratification. Three essential obligations ought to be cogitated: common goods, public education, and universal solidarity. The pandemic is opportune moment to reinforce and affirm these essential obligations and not to weaken them. We have chance to guard and augment public education, to strengthen universal common goods, and to consolidate global collaboration (Marginson, 2016). Didactic lessons from history have reminded us that transformational change can occur abruptly especially as an aftermath of any pandemic.

The present pandemic is drawing our attention to how vital public education is in society, and at individual level. It is a reminder that education is a barrier against disparity and its ability to enable lives of self-respect and purpose (Bernardi and Ballarino, 2016). As we hold this special chance to transform the globe, and as we reimagine our educational institutions and learning space, we will need to reflect on what we desire to become. The time has come—though unpredictably—where jointly revisiting the objectives of education and re-organizing of learning is increasingly imperative. It is on this premise that this theoretical review offers guidance on how to reimage education as a catalyzing agent for change in terms inclusion and access during pandemics in an effort to irradiate the ethical impasses and choices confronting us during pandemics.

Study objectives

The following general objectives guided this study:

1. To evaluate education as a common public good to enhance inclusion and access
2. To assess collaboration and participation of all education stakeholders as a strategy of enhancing inclusion and access
3. To establish need for robust wholistic education reforms to accelerate inclusion and access.
4. To determine need for resource mobilization to boost inclusion and access.

THEORETICAL ORIENTATION

The study is anchored on the Classical Liberal Theory of Equal Opportunities advocated by Sherman and Wood cited by Njeru and Orodho (2003). The central tenet in this theory is quest for equal opportunities in education for all

learners. The theory upholds the view that every child is born with already having some ability which to some extent is inbred and cannot be changed. Thus, education structures need to be organized in a way that removes obstacles of any nature like the one occasioned by the pandemics that thwart efforts by students from disadvantaged backgrounds from exploiting inborn talents, which propel towards social promotion. This theory intimates that social mobility would be motivated by equal opportunity enabled through the provision of well-structured education systems. Based on this philosophical view point, education structures need to be arranged with a view of eradicating impediments of any nature like socio-economic, socio-cultural, ecological, and institution-based dynamics which hinder learners from diverse backgrounds from benefiting from their inborn aptitudes thus education becoming the greatest equalizer. Pandemics such as COVID-19 and similar transmittable diseases, which force institutions to unanticipated protracted closures affect the disadvantaged and susceptible learners. While those from privileged households afford decent meals, modest accommodation, best medication and good digital gadgets as they continue to learn from the comfort of their houses, the converse for the underprivileged learners is true. Given this scenario it practically becomes implausible to disdain the argument that unequal participation in education will eventually jeopardize the chances of the disadvantaged and marginalized learners in terms of access and equity (Njeru and Orodho, 2003). It is for this reason that reimagining of basic education is of necessity to militate against any obstacles that might hinder the smooth progression of underprivileged and the susceptible learners

MATERIALS AND METHODS

The study selected and reviewed empirical literature related to the study between 2005-2020. The study utilized document examination as a method of qualitative research where documents are interpreted by the scholar to give meaning and voice to an assessment subject (Bowen, 2009). The study collected information from published articles on basic education with specific focus on change to enhance inclusion and access within the Kenyan context and other countries globally. The study employed a purposive random sampling strategy as it only reviewed articles that were concerned with reimagining of basic education. Description as a statistical unit of measurement was utilized in document examination and analysis in enhancing the secondary data collected qualitatively.

RESULTS AND DISCUSSION

The study sought to review literature on reimagining of basic education as a remedy for Catalyzing change for inclusion and access during pandemics under the following thematic areas guided by the study objectives which are:

To evaluate education as a common public good to enhance inclusion and access

Public education and public health are meticulously interrelated as they explicitly indicate the undisputable inevitability of teamwork, and shared responsibility for the common good (Zimmerman et al., 2015). The COVID-19 disease will not be conquered by health protocols alone. It further needs human empathy, enhanced public trust, progression in science, and valuing our common humanity. Education stakeholders ought to work in tandem with public health stakeholders. Each is depended on each other hence interdependence in the context of public space. Consequently, they cannot be in opposition to each other (Gan and Gong, 2007). A reinforced obligation to education as a common good implies consciousness that we are not only educating our children but also educating publics. Moreover, community active engagement and community-led learning is a crucial element of education and ought to be fundamental to any approach that acts as a panacea to both current and forthcoming challenges. Education has special significance in social, economic and political development for both the individual and the society (Lumumba-Kasongo, 2000). The worldwide epidemic has made noticeable the essential role of all-time learning, as persons of all ages require learning new approaches of re-structuring economic, social, and political life to suit the prevailing circumstances. The closure of public institutions, community centers, and libraries has made visible the crucial, corresponding roles that these institutions engage and the manner in which they must be looked at as indispensable component in understanding of the concept of public education (Chick et al., 2020). Various countries have not managed to counter public health catastrophes without the aid of society as a whole. The societal responsibility has been relived. The communities have realized the key part that public education takes in our symbiotic subsists (Zimmerman et al., 2015). It is apparent that each aspect of well-being affirmatively influences another. In public education just as in public health, the emphasis ought to be on collaboration not competition. We progress when everybody progresses. We are secure when everyone is secured.

Re-definition of the right to education

Education is a human right in itself and an essential platform for comprehending other human rights. The Kenyan Constitution, in Article 53 (1) (b) underscore the fact that every learner has a right to free and compulsory basic education. Further Article 55 (a) emphasizes that the government must take initiatives to guarantee the youth admittance to appropriate education and training. The underprivileged learners as provided in Article 56 (b) have a right to be accorded with opportunity in education

sector too. To actualize the same, the Basic Education Act (No 14 of 2013) has engrained the same tenets as law to control the delivery of basic education in the country. The 2011 Children's Act also recognizes and defends each learner's right to education. Societies ought to make effort to execute these statutory provisions and enhance them. During pandemics which lead to interruption, it has become challenging to guarantee the accessibility of quality operational educational institutions. All stakeholders must make effort to ensure that any regression is momentary, and restored as soon as the situation stabilizes so that what has been gained is not lost. Owing to the significance of a reinforced public commitment to education as a common good, there is need also to re-think how knowledge itself should be part of universal common good (Toquero,2020) This needs stakeholders to think beyond increasing and democratizing the approach in which knowledge is gained. We need to progressively take into account the ways the production and circulation of knowledge interconnects with the right to education. The COVID-19 disease has demonstrated that the right to education requires flexibility, ought to be altered to suit various contexts and to the demands of dynamic societies. Re-definition and expansion of the right to education has evidently become essential. The pandemics have laid bare the significance of digital online modes and connectivity to the level that we require to consider access to information as a basic right, linked to the right to education in manner that was not foreseen there before (O'Keefe et al., 2020). As the pandemic rages monocultures and homogeneity has been proven to respond shoddily to shocks and disruption especially in academics, consequently we are noticing transition towards fluid approaches to learning as a continuum where schooling and other formal education institutions network more meticulously with other less formal educational experiences from early childhood (UNESCO,2020). We ought to re-think perspectives in which right to education might need to be widened to include variability, capillarity and the varying contexts of modern societies.

Advocating for universal solidarity rising above the existing echelons of disparity

The swiftness at which the COVID-19 disease has spread has left us with a didactic element especially on our association to one another. Apparently out of this experience, anything drawing us apart must be redressed. The disjointed and uncoordinated approach to the pandemic is likely to attract disastrous and dreadful ramifications (Shipton, 2020). Notably, the pandemic has stimulated the rebirth of unhealthy politics of nativism that has been going on for some time now in several sections of the world. Regularly intertwined with political radicalism

and autarchical contempt for democratic ideologies, several nations have shifted towards separation and competition as opposed to cohesion and collaboration which is the panacea to help us mitigate the pandemic efficaciously (Shipton, 2020). Nevertheless, there are traces of hope noticeable. A rejuvenated sense of unity has taken hold of several communities efficaciously through lockdown as evidenced through constant supply of foodstuffs and medical attention to the deprived though not enough. The worldwide scientific scholars are working jointly transcending the national boundaries to alleviate the suffering caused by the pandemic. Our common humanity—principally has exposed by this epidemic—dictates universal solidarity. We are safe when everybody is safe (UNESCO, 2020). COVID-19 has similarly revealed the level at which societies exploit gender disparities and power inequalities. As children and whole families are restricted within homes, they face numerous challenges than ever before; gender violence has characterized the limited movements and home confinement and increased childbearing regularly leading to minimized openings for women. Education stakeholders ought to reimagine education to redress any of the abusive and lopsided relations where they occur (UNESCO, 2020).

The severest heights of human-made disparities are evident between the Global South and the Global North—and the pandemic has forced us to a situation of reckoning. Sadly, the most awful ramifications of these inequalities in the context of loss of human lives and incomes. Education stakeholders cannot stand and watch the echelons of disparities that have been tolerated to develop in our society today. There is still chance for education stakeholders to halt what might be the extremely grievous undoing to education opportunities realized in an era, where significant strides have been made (O'Keefe et al., 2020).

To assess collaboration and involvement of all education stakeholders as a strategy towards enhancing inclusion and access

Teacher collaboration

The COVID-19 crisis response especially to education has shown the capability of teachers to utilize their professional prowess to collaboratively mobilize resources and engage creativity that could not be possible administratively through issuing top-down orders (Grace et al., 2020). The education sector has proved to be among the most robust and pliable among all social institutions during this pandemic. Based on this development emanating from this catastrophe it is evident that we need to grant educators more independence and liberty to shape their professional ethos. Educators are indispensable partakers in informing

the future of education. The ability to initiate, test and invent that has been revealed during these epidemic interruptions must be galvanized. Teacher collaboration ought to further to be conceptualized as increasing to encompass engagement with a wide set of educational stakeholders (Robert et al., 2020). The nerve center of an educational process is the rapport between a learner and an educator. The educational environment that values its educators and accords them autonomy and encourages collaboration is best placed to deal with pandemics such as COVID-19 (Shipton, 2020). This catastrophe on the other hand has shown how tedious it is to deal with unanticipated circumstances in centralized bureaucracies.

Reinforced youngsters involvement to their rights

The rights of youths to get involved in decisions that affect them, mainly those concerning their future hasn't been given the seriousness it warrants. There is much conversation on the threats posed by the present pandemic to human rights. However, there is little attention given to the dangers it contributes to the rights of the youths (Terriquez, 2015). The COVID-19 protocols have caused great distress universally. Specifically, the psychological well-being of youngsters has been greatly impacted in a manner that could pose enduring ramifications (Ngwacho, 2020). During the post-COVID-19 era it will be important to provide redress to aftermaths like separations that have been occasioned due to isolations and social distancing limits. Education stakeholders are required to reflect ingeniously on approaches to re-connect with the youths. Empowering them to think and act collaboratively is one significant approach to achieve this. Strategies and policies to remedy the huge political, social, and economic interruptions instigated by the COVID-19 must be worked out through civic engagement; most importantly, the involvement of youths in these discussions must be a priority. In schools, learners ought to be given a leading role in designing the learning experiences and activities as institutions reopen (Terriquez, 2015).

To establish need for robust wholistic education reforms to accelerate inclusion and access

Education transformation focused on protecting the social space of the school

Radical transformation has characterized the education sector currently. Part of the changes has been motivated by ongoing pandemics (MoE, 2012). The closure of schools to minimize the spread of the disease may be misconstrued to mean that schools as physical structures are unessential. This is not true. The physical space in institutions as the main locale of learning is a key

component of formal education at every level. The COVID-19 catastrophe has reiterated the significance of institutions as centers of social services, remarkably in the provision of wholesome meals. As communal centers, institutions offer support for independence and cultivates ecologically bearable relationships with nature (UNESCO, 2020). Of significance is that, the space of the institutions accommodates social relationships. Human relations, discourse and exchange form part of education and learning. Precisely institutions are key components of collective living that cannot be substituted by distant learning. Institutions further provide learners with innocuous setting where to tolerate risks, test possibilities, and discover potential. They are crucial avenues of becoming who we want to be. Significantly, institutions are also avenues where we meet others who are different from us, others whom we learn from and with, others who increase our insight of the worldwide tapestry of humanity (Liu and Sibley, 2004).

Even though the institutional space has been underscored as being essential, it requires transformation and improvement by a much wider space for learning. It is evident how in this pandemic how economic and professional life is structured around the institutions, its timetables and its almanacks.

Participatory, open and free technologies for educators and learners

In the wake of COVID-19 catastrophe focus in mobile digital learning technologies has grown tremendously. Portable digital gadgets have freed learning from restrictive and fixed environments, essentially providing paradigm shift from the manner on how knowledge is diffused globally (Robert et al., 2020). In this digital era, it is ridiculous to ignore institutions especially in terms of access to knowledge and communication that are progressively perceived as obligatory elements of everyday life consequently leading to digital divides. This paradigm shift underscores the significance of connectivity and internet access. On this pretext emphasis should be put on open access and open licensing policies that enable no-charges and reuse. Open educational resources ought to be given priority; digital platforms facilitated by private corporations cannot be relied upon by public education institutions (Areba, 2021a). Public educational institutions cannot be shaped and controlled by methods and content crafted outside the pedagogical space of educators and learners. Ready-made materials and content distort the skillfully well-thought-out work of educators and learners. The abrupt a must do or die competition for resources, materials and platforms evident during epidemics poses a great danger to the teaching profession and its independence and could pose grave challenges to the future of education (Areba, 2021b). Any digital shift should have all

educational stakeholders getting involved in shaping these transformations and discourage the push-down syndrome from technological corporations to enhance ownership and efficient utilization from the direct users.

Curriculum entrenched in robust scientific literacy and purpose

The ongoing pandemic (COVID-19) has triggered reflections from education stakeholders on what learning is for and calls all of us to re-examine the kind of skills and competences we desire education and learning to impart. The present limitation of learning to curricular essentials that we observe happening as institutions close will be a barrier to wide-ranging humanistic aspects of education that are significant for thriving of democracy, peace, and intercultural appreciation (Robert et al., 2020). The COVID-19 pandemic provides us with the right opportunity for serious reflection on curriculum. Curriculum emphasizing on wholistic development of learners and not just academic skills ought to be our priority. The 1996 Delors report 'Learning the treasure within' re-affirms this position, in its description of four supports of learning as learning to know, to be, to do, and to live harmoniously. Curricula ought to be progressively integrated and structured alongside thematic areas that permit us to learn to co-exist harmoniously in one accord based on our common humanity. Critically, one specific curricular facet needs our urgent consideration. This challenge has been with us and did not start with the ongoing pandemic but it is becoming most critical with the raging pandemic: the spread of fabrications and misinformation. This is becoming dangerous for social fabric that binds humanity and terminating many lives (Robert et al., 2020). This is complex challenge, concerning the association between knowledge and science. In critical times such as the pandemics and climate change we have witnessed the disowning of scientific knowledge and the construction of "facts" that serve conceited motives. The education sector needs to come out and provide guidance on this critical matter (O'Keefe et al., 2020). It is important that there be a re-energized campaigns to encourage global scientific literacy, particularly to marginalized populaces. Almost all of us have encountered unparalleled quantity of information, which many a times is characterized with a lot of inconsistencies even when emanating from reliable sources. The classic difference between vagueness and risk is no longer legal, given that there is rising uncertainty on risk itself. The classical example is how to interpret opposing representations of data and trends. Education sector cannot overlook this state of affairs (UNESCO, 2020). The connection between knowledge and facts ought to be openly discussed. The subject of scientific literacy has gained great prominence and urgency.

To determine need for resource mobilization to boost inclusion and access

Protection of international and domestic funding of public education

The full effect of the epidemic on the future of education is not yet fully established. What is clear is that the economic impact has led to loss of jobs, incomes and rising levels of susceptibility than ever before. These economic strains have severe repercussions on parents and guardian's capability in terms of advancing the education of their children due to lessened financial ability to provide assistance in terms of education requirements for their children (Toquero, 2020). Easing the economic strain due to this crisis is expected to lead to fiscal austerity. The economic decline is further likely to bring down generally the base of public resources. The aftermaths of such changes are possibly to affect excessively the marginalized and vulnerable children of the underprivileged. Such adverse effect to this group of children is negating the fundamental principles of fairness and human rights. As we forge the way out of this mess, all states need to resist pressures from without to extremely constrain education expenses (Toquero, 2020). The ramifications of the pandemic already with us and now thwarting educational opportunities for many disfranchised learners will be remedied by how individual states and international partners respond now and in future. Currently, several states globally are severely indebted and the gravity of debt repayment lessens the fiscal ability for financing the urgently required projects in educational institutions. Many states are staring into serious cash crunch and will be required to make a choice between funding critical services to safeguard critical social and economic wants, and repaying the much-accrued rising debts. There is still chance to halt what might be the utmost grievous interruption of education opportunities in an era, where significant improvements in educational growth and steps to attain educational fairness might be obliterated (Zimmerman et al., 2015). International funding organizations and states need to synchronize energies to guarantee protection of the internal and international sources of funds of education with the view of sustaining continuous learning. With strict compliance to redistributive fairness, funds ought to be shared to the vulnerable that have been affected severely economically, socially and academically. There is dire need for every state to re-examine and restructure their education financing models. There are attempts already made to some extent to limit public services at the time when we should enhance and upsurge service delivery. The United Nations leadership and other global development players will be vital in supporting the fiscal commitments that may protect the Sustainable Development Goals and Education vision 2030 reform agenda from lagging

behind (Toquero, 2020). Giving priority to education and seeking enhanced global collaboration to assist guarantee the right to education is what is expected to be extremely challenging amidst calls for accountability and efficiency from global education sponsors for them to continue adding value to national initiative to deliver education to all that is appropriate to a fast-changing society.

Conclusion

The ravaging pandemic has exposed the uneasy challenges that accompany that intricacy; nonetheless it has revealed to us that intricacies similarly generate strong dynamism and numerous potentials. The devastating challenges that come with indecision have been meticulously made visible. The pandemic has proved that indecision also encompasses exceptional capacities. We have come face to face with startling menaces and susceptibilities of our frailty, nonetheless the pandemic has provoked us to remember that frailty similarly prompts consciousness, sensitivity to our interrelationships, and can be a fountain of hope where there is none (Cullinan et al., 2021). Conclusively, reinforced concept of education as a public good, wholistic robust reforms, collaboration, involvement of all stakeholders, resource mobilization, and enhanced sense of education as a shared responsibility, inventions and ingenuity are likely to be possible mitigations towards existing education disparities geared towards reimagining of education so that short-range impediments do not translate into bigger, lifelong challenges.

Recommendations

Ensuing from this epidemic is the fact that education is on the verge of great transformation. This demands for resource mobilization and involvement of all education stakeholders to lead the education transformative agenda. There are no suitable off-the-rack remedies, scientific or otherwise, it is out of the responses we mutually reach at by means of all-encompassing discourse and decision-making which will be part of reimagining of education as a panacea to existing challenges laid bare by the pandemic (Toquero, 2020). The COVID-19 catastrophe has revealed that invention and ingenuity are widely spread and not restricted to a few designated human beings. There is need to learn from and strengthen the responses emanating from educators, learners and common folk—for in them lies the potential for transforming education during and after the current crisis. Responses for the ongoing raving pandemic may be at variance from one region to another, from one setting to another.

Nevertheless, all these efforts must be anchored on humanitarian vision of reimagining education as a human right for all. All reforms must reinforce public education,

strengthen common goods and increase universal unity that stresses the shared responsibility for education of all regardless of any affiliations (World Bank., 2020).

CONFLICT OF INTERESTS

The author has not declared any conflict of interests

REFERENCES

- Amujiri BA, Onah CC, Oloto SE (2021). Covid-19 Pandemic: Challenges and Opportunities. *International Journal of Public Administration and Management Research* 6(1):50-59.
- Areba GN (2021a). Reconceptualization of Education Policy and Practice Following the Coronavirus Pandemic in Kenya. *Pan-African Journal of Education and Social Sciences* 2(1):24-34.
- Areba GN (2021b). Managing High Quality Virtual Learning in Response to Covid-19; Learner and Faculty Preparedness, Inhibitors and Mitigations in Kenya's Higher Education. *African Journal of Educational and Social Science Research* 9(1):2617-7315.
- Bernardi F, Ballarino G (2016). Education as the great equalizer: a theoretical framework. In *Education, Occupation and Social Origin*. Edward Elgar Publishing.
- Bowen GA (2009). Document analysis as a qualitative research method. *Qualitative research journal* 9(2):27-40.
- Chick RC, Clifton GT, Peace KM, Propper BW, Hale DF, Alseidi AA, Vreeland TJ (2020). Using Technology to Maintain the Education of Residents During the COVID-19 Pandemic. *Journal of surgical education* 77(4):729-732.
- Cullinan J, Flannery D, Harold J, Lyons S, Palcic D (2021). The disconnected: COVID-19 and disparities in access to quality broadband for higher education students. *International Journal of Educational Technology in Higher Education* 18(1):1-21.
- Gan Li, Guan G (2007). Estimating interdependence between health and education in a dynamic model. No. w12830. National Bureau of Economic Research.
- Grace ON, Odhiambo AI, Amolo OP (2020). Influence of Stakeholder Empowerment on Mobilization of Resources for Science Activities in Early Years' Education Programmes in Kisumu West Sub-County, Kenya.
- Liu JH, Sibley CG (2004). Attitudes and behavior in social space: Public good interventions based on shared representations and environmental influences. *Journal of Environmental Psychology* 24(3):373-384.
- Lumumba-Kasongo T (2000). *Dynamics and Policy Implications of the Global Reforms at the end of the second Millennium*, Leiden, Boston: Brill.
- Marginson S (2016). *Higher education and the common good*. Melbourne University Publishing.
- Ministry of Education (MoE) (2012). *A policy Framework for education and training. Reforming Education training in Kenya*. Government Press.
- Ngwacho AG (2020). COVID-19 pandemic impact on Kenyan education sector: Learner challenges and mitigations. *Journal of Research Innovation and Implications in Education* 4(2):128-139.
- Njeru E, Orodho J (2003). *Education financing in Kenya: Secondary school bursary Policy Analysis and Research*.
- O'Keefe L, Rafferty J, Gunder A, Vignare K (2020). Delivering high-quality instruction online in response to COVID-19: Faculty playbook. *Every Learner Everywhere*.
- Robert R, Kentish-Barnes N, Boyer A, Laurent A, Azoulay E, Reigner J (2020). Ethical dilemmas due to the Covid-19 pandemic. *Annals of intensive care* 10:1-9.
- Shipton B (2020). *Police Educators' Experiences of Teaching: Detailing Differences between Teacher-and Learner-Centred Approaches*. *Journal of Criminal Justice Education* 31(2):232-249.
- Tawil S, Locatelli R (2015). *Rethinking education: Towards a global*

- common good? Dostupné z <https://www.norrag.org/rethinking-education-towards-a-global-common-good>.
- Terriquez V (2015). Training young activists: Grassroots organizing and youths' civic and political trajectories. *Sociological Perspectives* 58(2):223-242.
- Toquero CM (2020). Challenges and Opportunities for Higher Education Amid the COVID-19 Pandemic: The Philippine Context. *Pedagogical Research* 5(4).
- UNESCO (2020). Education in a Post-COVID World: Nine Ideas for Public Action International Commission on the Futures of Education.
- World Bank (2020). The COVID-19 pandemic: Shocks to education and policy responses.
- Zimmerman EB, Woolf SH, Haley A (2015). Understanding the relationship between education and health: a review of the evidence and an examination of community perspectives. *Population health: behavioral and social science insights*. Rockville (MD): Agency for Health-care Research and Quality pp. 347-84.

Full Length Research Paper

Entrepreneurial education: An overview of alternative and effective school practices and actions in Cyprus and Greece educational system

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This conceptual paper aims to annotate the existing practices and actions of entrepreneurial education in Cyprus and Greece educational organizations taking into account the centralized school contexts. At the same time, it presents the literature background regarding the new principal's role in the 21st century in order to provide adequate school practices and actions in recent years. Specifically, it seeks to report the entrepreneurship theory and aspects concerning current practical applications in educational organizations. Consequently, the study indicates that according to the entrepreneurial education via the educational systems has the opportunity to adapt relevant programs for leading the schools in the effectiveness and improvement.

Key words: Entrepreneurial education, leaders' role, practices, actions, centralized educational system.

INTRODUCTION

In recent years regarding to the constant changes were instead at all scientific levels, each person should be adapted accordingly to achieve effectiveness in educational organizations. In particular, the significant role of the stakeholders in education revealed the contribution to acquiring the necessary knowledge, skills, and abilities to the students regarding the modern reality. Therefore, workplace changes have directly affected the critical role of the Professional Counsellor and the Career Counsellor. Specifically, they should be adapted in the context' needs, as well as engaged the entrepreneurship

with educational purpose and aims (Eurydice, 2012). Undoubtedly, changes in the workplace are related to the continuous development of digital technology and its integration into all workplaces. In essence, persons should possess knowledge, skills, and abilities of digital technology and use them daily to increase project production and personal and professional improvement.

It is important to refer, that the high unemployment of young people, which is constantly increasing worldwide, and the economic crisis in connection with the rapid changes associated with the complex

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economy and knowledge society, constitute the need for transversal skills. Consequently, these skills characterized the implementation of processes that promote entrepreneurially and, in particular, innovation and critical thinking and develop creativity and social skills.

However, various researchers claim the development of knowledge skills and mentalities regarding significant importance to entrepreneurial development in Europe (European Commission / EACEA / Eurydice, 2016; Eliophotou - Menon, 2016; Eliophotou Eliophotou - Menon, and Athanasoula – Reppa, 2017).

In addition, other researchers, as Leffler et al. (2010), argue that the business approach should be supported by teaching methods such as (a) action-oriented, e.g., problem-solving teaching and learning (b) project-based teaching and learning (c) focused on practical learning and (d) from the opening of schools to cooperation with professional life. In these similar views, Gibb (2008) investigated that in order for business education to be integrated into the education system, it should be: student-centered (elementary), topic-focused (secondary), professionally focused (on further education), and industry-focused (at the University).

In this respect, the literature review highlights the changing pattern from conventional/traditional teaching in modern methods based on "active learning". The "business education" seeks a combination of experiential learning, skills development, and most importantly, a change of mentality (Wilson, 2008). Consequently, entrepreneurship is included globally in the "Agenda 2030", in sub-objective 4.4., between the 17 Objectives and 169 UN sub-objectives for Sustainable Development (UN, 2016).

This article investigated the significance of entrepreneurial approaches on education in Cyprus and Greece and emphasized to the key elements of entrepreneurship by international research. Teachers and leaders in 21st Century need guidance and monitoring for selecting and adopting effective entrepreneurial practices and actions in their organizations. In particular, the current study aims to provide: (1) the basic dimensions of entrepreneurial education, (2) the Principal's role, and (3) alternative entrepreneurial actions and practices in centralized educational systems. Specifically, the study sought to illuminate, understand and present evidence drawn from the international aspects and lead the practices and actions of entrepreneurial education.

Entrepreneurship and entrepreneurial education's importance were based on the adopting of various programs and actions in the internal and the external educational organization environment. Promoting entrepreneurship in modern educational organizations has always been one of the educational policies of the European Union and a key element of achieving school effectiveness (Eurydice, 2021). In recent years, entrepreneurs should have organized actions based on

The mutual support, sharing ability and collective competence that as Mignenan (2021) stated are the appropriate strategies in the post pandemic era. Therefore, the author also investigated the collaborating management characterized as a main factor of effectiveness taking into account a specific context.

Entrepreneurial education and critical elements

The concept of entrepreneurship includes any attempt to transform the initiative into a result of economic or social value. Its key components are creative thinking, innovation, initiative development, management, and Leadership (Reppa, 2018). Entrepreneurial education derives related to the cultivation of the trainees' skills and way of thinking to turn creative ideas into business action (European Commission, 2013). Therefore, recent studies underline the significance of entrepreneurship, such as a critical competence for all learners, which promote personal growth and improvement, active citizen participation, and simultaneously aim, to the social inclusion and employability. In the context of the implementation of entrepreneurial education, the role of a Professional Advisor becomes crucial and decisive in the achievement of the whole process (Reppa, 2018). The entrepreneurship has an effective adaption if it characterized the innovation. Entrepreneurship education provides the use of knowledge and new ideas to produce and provide new products or services. For instance, international studies (European Commission, 2013) have focused on exploring and mentioning innovation, such as a new product or service through the way of production or the technology used and the management structure of an organization. Moreover, the increasing emphasis on innovative actions can be radical, regarding the immediate and decisive changes in the workplace or gradual, with the long-term implementation of innovative elements, taking into account the status quo (European Commission, 2013).

It is important to understand that entrepreneurial education is regarded the appropriate dimensions for school effectiveness. Through entrepreneurship, creative thinking provides the mental function, ability, and process of producing original and innovative ideas and products based on value or utility in the individual, society, and culture.

More specifically, this new approach characterizes by strong mental mobilization and perseverance and includes the precise shaping of an initially confused and undefined problem. Furthermore, international organizations indicate the rational and disciplined character of critical thinking, while aiming to produce original and innovative ideas through imagination and intuition rather than basic elements. In essence, the procedure is based on alternative solutions. At the same time, creative thinking also implies the exercise of critical thinking. Entrepreneurial education is directly related to

critical and creative thinking (European Commission, 2013). Therefore, against critical and creative thinking, there are different characteristics.

Critical thinking is a process performed on the individual; it focuses on further analysis, and is convergent in several cases. Additionally, it is generally characterized by one-dimensional features and logic. Therefore, the procedures of adopting critical thinking provide acceptance or rejection of situations, justifying all possible manifestations and seeking advantages and disadvantages in each case. In contrast, creative thinking, based on the synthetic ability of the individual, is deviant, occurs in parallel with other forms of thought, and is generally multidimensional. Although that, the main element, such as innovation, assumes an individual accepts situations while seeking further evidence and explanations. Consequently, entrepreneurship education promotes significant skills and knowledge in all the educational levels that could be useful for the educational organizations, as well as for the student's future.

New leader's role

The leader is characterized as a depended factor of school effectiveness. Hence, there is the successful adaption of the entrepreneurial approach regarding the effective style of leadership approach. Kuratko (2007) indicated that effective entrepreneurial leaders should be characterized by continuing development and improvement in order to have a continuing adaption in every single context. A significant assumption regarding the support of government in all the programs and actions created for promoting entrepreneurial skills. According to Pashiardis and Brauckmann (2008), entrepreneurial leadership style has a positive and significant influence on 21st-century school effectiveness. Therefore, based on the exercise of management and leadership practices, the leader should seek parental involvement in the educational process and the involvement of other external factors for the successful implementation of the business leadership style. Simultaneously, cooperation is an essential element regarding the appropriate resources used to implement entrepreneurial elements. The entrepreneurial leadership style based on the LISA program was observed to be applied by most managers in the participating countries. The program's results investigated that there is a general trend toward entrepreneurial leadership style for the reason that there are limited resources to utilize. However, there is a need to create supporting educational systems and as a result stated, the leader's influence was based on building alliances.

Specifically, the similar research views extracted by Brauckmann and Pashiardis (2011) stated and highlighted the following leadership styles: Pedagogical, Structural, and Entrepreneurship, which create a

successful "cocktail mix of leadership" styles. Moreover, the above research highlights the entrepreneurial leadership style characterized as the most effective leadership approach. Entrepreneurial leadership style practices seem to be used more by managers. Thus, the entrepreneurial behavior of leaders is a common European leadership characteristic. At the same time, this research effort report that there is no perfect leadership style against the leadership style that is applied, taking into account the school context of each educational organization. In this context view, Anastasiadou (2020) stated that the factors that have a positive and statistically significant effect on entrepreneurial education are Self-Efficacy, Opportunity Detector, Sociable, Planner, Risk Taker, Leader and Creative. Simultaneously, this research strengthens the positive leader's role in the process of successful implementation of entrepreneurship, since the strongest correlation was between the conceptual constructs Leader and Entrepreneurship. Pauceanu et al. (2021) investigated that entrepreneurial characteristics are engaged with leadership characteristics. Therefore, leaders have the opportunity to become effective entrepreneurial leaders if they adopt, develop and improve characteristics such as creativity, risk-take, achievement orientation and visionary.

In this respect, the entrepreneurial leadership style sets as essential preconditions the involvement of the external environment and financial management. Moreover, it is directly related to the creative use of external networks and resources to help accomplish the school's mission. In particular, leaders develop positive interpersonal relationships and partnerships with parents and the wider school community. The favorable climate and the positive interpersonal relationships among parents and the educational organization influence the learning outcomes and the student's achievement (Pashiardis, 2000). Similar views pointed out by Dinham's (2005) research demonstrate the importance of the external environment in school effectiveness. Moreover, developing positive relationships with stakeholders in the external environment can secure the necessary resources to implement entrepreneurial activities.

A recent research study focusing on the new scientific management, "New Public Management," directly connects with the external environment and modern changes and reforms (Pashiardis and Brauckmann, 2018). The implementation of this approach takes into account the personality traits of leaders, education, and training, as well as experience. Leaders can combine leadership practices of entrepreneurial leadership styles and pedagogical leadership styles. Based on the application of business style and according to the elements of innovation, find creative solutions in the educational organization. Consequently, the researchers who previously referred pointed out the significance of entrepreneurial Leadership according to the achievements

in the educational organization. Therefore, school entrepreneurship regarding the correlation of the educational organization with the labor market promotes the implementation.

In addition, similar research findings (Brauckmann et al., 2019) indicated the significance of school leaders' entrepreneurial Leadership approaches as potential Leadership based on new public management across various educational contexts. Therefore, other research studies regarding this research context, such as Pashiardis and Brauckmann (2019) research highlighted the elements of Edupreneurial leaders regarding the critical role of change processes and the significance of alternative teaching methods.

Currently, researchers such as Brauckmann-Sajkiewicz and Pashiardis (2020) investigated that the principal adopted Entrepreneurial Leadership in schools through specific phases: (1) "Entrepreneurial School Leadership as an unwelcome act". In this phase, the leaders are hesitant to make relevant decisions by implementing entrepreneurial activities and actions in their schools. This adoption will be more difficult in educational systems where the school autonomy has limited the decision-making. (2) "Entrepreneurial School Leadership as a voluntary and occasional act". In this phase, the leaders understand the school's efficiency, and therefore there is difficulty implementing new actions, (3) "Entrepreneurial School Leadership as a necessary action because of accountability". In this phase, the leaders need to apply entrepreneurial actions to reach the school's effectiveness, and in the (4) phase as called "Entrepreneurial School Leadership as transformation into something new" the leaders adopt the entrepreneurial actions for high impact on the external environment, and the pedagogical style for reaching the highest results to the internal environment. A similar view stated by Yemini et al. (2014) provides the significance of school autonomy for adopting entrepreneurial Leadership by the principal. Bagheri and Harrison (2020) indicated that an effective cultural and economic context supports the promotion of entrepreneurial leader's skills. Consequently, developed economies develop an effective context for a successful entrepreneurship adoption (Harrison and Burnard, 2019).

In recent times, a period of changes and uncertainty in different levels of society, school leaders have the opportunity to supply specific entrepreneurial leadership skills in order to succeed the school effectiveness and improvement (Pashiardis and Brauckmann, 2022). These skills should be based on collaboration with all the external stakeholders.

More generally and regarding to the research of Pashiardis and Kafa (2021), a successful school principal should be able to create school's external relations, promote networking and therefore, developed actions in order to connect the school with the society needs. The entrepreneurship education was based on the leaders'

effective promotion and supplementation.

Skills developed through entrepreneurial education

Undeniably, entrepreneurship is an emotion-oriented human activity. As entrepreneurs have an essential role and impact on the economy and society, their success or failure may be crucial for their psychology. Frese and Gielnik (2014) support that some personality dimensions such as self-efficacy and achievement are highly associated with entrepreneurship. It also argued that entrepreneurs must develop specific skills such as creative and critical thinking.

Creative thinking is the mental function, ability, and process of producing original and innovative ideas and products that have some value or utility in the individual, society, and culture. It is characterized by mental solid mobilization and perseverance and includes formulating an initially confused and undefined problem (Reppa, 2010). It does not have the rational and disciplined character of critical thinking and aims to produce original and innovative ideas with imagination and intuition rather than simple logic. It does not look for one of the correct solutions but alternative solutions.

Even though creative thinking is considered the strongest among the two for an entrepreneur, it also requires critical thinking. According to scientists who study the function of the human brain, there is a division of the brain into two hemispheres, which, however, are constantly in contact with each other; the left hemisphere refers to knowledge and logic related to critical thinking, and the right hemisphere refers to emotions, imagination, and creativity, related to creative thinking. In addition, the right hemisphere of the brain responsible for people's emotions is also named the "heart".

To become entrepreneurial, teachers need to educate their students to have a "heart" that thirsts not for knowledge and information but emotions, too (Reppa, 2010). They should cultivate students' emotional world and, more significantly, their emotional intelligence. Governments should let the teachers not forget that they have a pedagogical role in addition to the didactic role. This pedagogical role is realized by developing personal Relationships with students, where students feel such confidence with their teachers that they open up and talk about their anxieties and dreams.

Most importantly, they show their true self and not just the self they think the teacher expects. Students develop their humanity and creative thinking only when such relationships of trust occur, an essential ingredient for entrepreneurship.

Educational organizations and entrepreneurship

According to the European Commission

(<https://eurydice.eacea.ec.europa.eu/national-education-systems/cyprus/overview>), Cyprus' and Greece educational systems are centralized and therefore, depended from national legislation. Consequently, the aims and principles of education, the regulations of operation of schools or other educational institutions, examinations, funding and staff related issues are determined by the Ministries of Education.

Additionally, educational systems have the centralized authority in policy making in education. However, the autonomy characterized as very limited at the school's unit level. According to school's limited autonomy teachers have the autonomy to adapt the offered teaching methods and principals to manage a small budget for extra expenses of the school unit. Simultaneously, school units have the opportunity since 2017 to create an additional mentioned aim at the beginning of the school year regarding the school's context and needs. At the higher education level, the Council of the universities have the responsibility to management the financial affairs and therefore, characterized as autonomy organizations. It is important to state that Entrepreneurship Education should be a part of this centralized educational system according to the limited autonomy of school unit.

Cyprus educational organization and entrepreneurship

The Cypriot and Greek educational organizations support teachers' collaboration with their students according to the entrepreneurship. Therefore, they had proven various innovative and valuable activities. Utilizing their ideas, students create a real business as entrepreneurs within a business program called the Student Enterprise program of Junior Achievement. The program's founders seek to utilize emerging students' talents in business and inspire the youth of today against social and economic challenges with new ideas and achievements. However, the program has also been developed to educate and empower students to transform their future and own their economic success, which will solve many social problems. It has been endorsed as the best practice in high schools in Cyprus by the European Commission, and up until 2020, it has involved more than 2,500 students in its educational programs.

Specifically, the Junior Achievement of Cyprus, through a yearly National Competition of Entrepreneurship, serves as a bridge between students and a great network of the business community, educators, mentors, volunteers, and alums.

It provides an entrepreneurial learning experience that seeks to nurture a new generation of innovative talents, aiding them to reach their potential and dream big. Entrepreneurial teachers stand alongside students to motivate them as business mentors and guide them to

run a real business, form their teams, raise capital, develop a business plan, develop their product or service, and run marketing and sales activities of their business. Consequently, the students take responsibility for their actions and become accountable to the shareholders of the business for its running and growth, supporting the concept of learning by doing.

Simultaneously, creativity and innovation should be developing to the students from an early age - kindergarten, utilizing the STEAM (Science, Technology, Engineering, Arts, Maths) fields through the general reform of the Curricula.

As part of this idea, the Entrepreneurial School has created: The "school" of entrepreneurial (School Education Gateway-Erasmus+, 2014), but also several other initiatives and programs, which utilize entrepreneurial ideas and focus on the students of Cypriot educational organizations. Therefore, there is the first focus on entrepreneurship within the educational organization. Specifically, a "sense of initiative and entrepreneurship" is one of the eight critical skills for lifelong learning promoted in the European Union. Therefore, teachers must be prepared to introduce it into their classrooms.

Overall, an increased interest characterized the Entrepreneurship Education in Cyprus in the last few years. The Cyprus Ministry of Education promotes specific skills regarding entrepreneurship development. As a part of this process, a national working group supports these actions. Specifically, entrepreneurship education was adapted in Science and Economic school subjects. According to Ministry of Education, effort has created a lot of programmes and actions. The Company Programme that was organized by Junior Achievement Cyprus and referred to secondary education lever promotes the students entrepreneurial skills. The students have the opportunity to create an idea for their own business and supply it (<http://jacyprus.org/2014/12/companyprogramme/>).

Additionally, according to the Support Scheme for Youth Entrepreneurship and in order to promote and support the entrepreneurship education to young people, a specific programme takes place in Cyprus. However, this programme was supported by European Regional Development Fund and Government (<http://www.mcit.gov.cy/mcit/mcit.nsf/All/55800C9432D0D9C6C2257C15002F899F?> A similar with the purpose programme namely Cypriot Enterprise link was included in the education system. The programme referred to students and institutions. Specifically, promote entrepreneurship aims under the provision of information, workshops and projects via a youth –led online platform (<http://www.projectcel.com/>). Moreover, a relevant programme is the Innovation Camp by Junior Achievement Cyprus and this programme is characterized as an International Programme of Innovation Camp via the adoption of an annual one-day

event adapted in Secondary Education for promoting teamwork and explores ideas and entrepreneurial skills (<http://iacyprus.org/2014/11/innovationcamp/>).

Simultaneously, a several relevant programmes and actions were promoted in Greece educational system. Entrepreneurship education provides challenges and new era in all the education levels as referred in Pouliopoulos and Stimuli for Social Change team (2022). Higher Education level consisted via specific courses in universities' schools, such as economic and business administration schools. However, there are optional courses that were taught in other departments. Additionally, entrepreneurship was adapted in Primary and Secondary Education via general subjects for utilizing curriculum actions (Papagiannis, 2018). More specifically, Ministry of Education promote international trends such as "Skills Laboratories" in Primary and Secondary Level of Education.

These skills laboratories regarding four aims: quality of life, environment, social responsibility and innovation. Consequently, these skills are correlated with the 21st Century Skills such as life skills, soft skills and entrepreneurial skills. The teacher's and leader's roles are significant according to the utilization of curriculum actions. Therefore, the autonomy of the educational system is limited and the leader and teacher should be adapting their entrepreneurial actions in this specific context.

Entrepreneurial courses inserted in school curricula

It is interesting to explore and examine the cases where Ministry officials have approved the reform of school curricula towards entrepreneurship. For the first time, the initiative was taken in Cyprus. From September 2020, the school curricula of the third grade of Lyceum of Cyprus have inserted a course named Practice and Application of Organization and Business Management (Charalambous, 2020). The course up to this point was theoretical, and there was no practice or application involved. As renamed to an applied field, it aims to present issues related to modern business organization and management and energize students that setting up a business that provides differentiated products and services from competitors and taking on financial risks can produce profits.

The course includes modules that generally concern companies and organizations, such as functions and efficiency of a company, business environment, modern trends, and competitive advantage proposals. In addition, a new teaching manual has been launched, full of case studies and practical illustrations to cultivate innovative talents and respond to the demands of entrepreneurial education. The manual relates to theories of outstanding academics such as Michael Porter and Igor Ansoff case studies and examples to develop an entrepreneurial competency framework.

The scope of the course, for instance, requires students to (1) explain and distinguish through business scenarios and scripts, the four competition strategies proposed by Porter and the four development strategies proposed by Ansoff, (2) prepare a SWOT analysis, based on business scenarios and scripts, categorizing the data into strengths and weaknesses of the internal environment and opportunities and threats of the external environment of a company, (3) define, explain and give examples of stereotypes, self-limiting thinking, one-dimensional thinking, assumptions and traps in thinking as barriers to decision making, and (4) distinguish through business scenarios and scripts, the obstacles, and pitfalls in decision making.

The course offers students the opportunity to learn about how organizations conduct their work by carrying out practical applications. Currently, the course is not obligatory for all students and taught by their choice, but the effort is being made to reach all school curricula. Its focus and approach to learning by teaching entrepreneurship more quickly and more efficiently. Through the reformed curricula of the course, students learn to become entrepreneurs by trying to solve authentic problems and researching other entrepreneurs' novelties.

Greek educational system and entrepreneurship

Additionally, on a similar vein the Greek educational system (Ministry of Education, 2017) promotes entrepreneurship in educational organizations through specific programs and actions. Activities aimed to develop innovation and social entrepreneurship within the institution of the school cooperative. The purpose of these activities were based on familiarizing students / three secondary schools with the concept of social entrepreneurship, which is governed by the principles of school cooperation, such as mutual assistance, cooperation, social responsibility, development of independent thinking and democratic consciousness, knowledge of collective forms of economic activity. The Youth Entrepreneurial Association offers support for educational activities on this topic. Therefore, it proposes and supports relevant programs that promote the exchange of experiences and ideas between students from different schools, different regions of the country, and different social environments, while, in addition, highlighting the role and value of volunteering.

Moreover, activities aimed at the development of innovation and social entrepreneurial are promoted - Social Innovation Competition in order to familiarize secondary school students with the basic principles of economics and the concept of social enterprise (which aims to cover social needs, operating as a non-profit organization) (Ministry of Foreign Affairs, 2016). The purpose of these educational activities were characterized

by the social contribution and the satisfaction of the needs of society as the main goals of innovation and social entrepreneurship, always with respect for the natural environment, and to contribute to enhancing the students in search of innovative solutions and taking community-based initiatives to realize their potential to contribute to economic progress and positive social change.

Respectively, some efforts have been made with students of the Higher, and Higher Levels in Greece. For example, scientists are testing in public, some for the first time, their skills in the scientific field. A similar program focusing on the student "Virtual Business" in Greece, within the global organization Junior Achievement Worldwide, offers the "Company Program" for 100 years in Greece. Based on this program, students create unique products and provide services as entrepreneurs; therefore, any profits that arise are donated to charity. During this program, they have also participated in Trade Fairs inside and outside Greece. A centralized educational system with similar purpose with Greece's program, adopted by the Cypriot educational system. Therefore, at all levels, various relevant programs have been developed in the Cypriot educational system.

In Secondary Education, similar to this view, programs, such as the Creativity, Innovation, and Business Ideas Program "Ideodrome" Junior Achievement-Young Enterprise Program, contribute to developing entrepreneurial skills and abilities. At the same time, in the Greek educational system (Ministry of Education, 2016, 2017), activities were developed for innovation and social entrepreneurship within the institution of the school cooperative - startups.

Additionally, the student "Virtual Business" of the Youth Entrepreneurial Association / Junior Achievement Greece is a remarkable effort in Greece. Therefore, in recent years, the competent authority in Greece has promoted several activities as a specific educational policy, which aims to develop innovation and social entrepreneurship-Social Innovation Competition.

Although modern educational organizations focus on the holistic development of students, emotional skills are not fully developed. That is due to two main parameters. In essence, the degradation of arts and lessons of experiential activities, and at the same time, in fear of teachers being in uncharted waters, taking into account the time pressure. In particular, the Curricula are more knowledge-based by overloading the material. At the same time, cultivating children's emotional world is minimal or non-existent. In the centralized education systems (Cyprus and Greece), some courses are degraded at all education levels, and others are superior. The visual arts, dance, theater, movement, music, and sports are in a secondary role, setting aside benefits and positive elements that would result from their proper use. The rich "nutrients" for developing children's emotional intelligence could be utilized through them. The second

main reason for insufficient emotional skills development within the educational organization is teachers' hesitation about what they will face since many do not possess the necessary knowledge and skills, or the time required for this process. Teachers are not unjustifiably afraid to wander in uncharted waters and spend valuable teaching time cultivating emotional skills, escaping the familiar paths of their teaching. The overload of the Curriculum prevents teachers from engaging in the process of developing specific skills, although they know and understand their importance in the overall development of students.

Entrepreneurial education is a crucial factor in growth and innovation. For many years, the development and promotion of entrepreneurial education have been one of the primary policy objectives of the European institutions and the Member States. However, while some countries have been committed to promoting entrepreneurial education for over a decade, other countries are just beginning. Curricula in European countries integrate entrepreneurial education strategies related to entrepreneurial education (EU) designed by the central authorities, 2014/15 prove that the four strategic goals are the active participation of citizens, social entrepreneurship, the creation of new businesses, and employability. A recent program, "KidVenture" (School Education Gateway - Erasmus, 2020), strengthen children's business mentality through electronic games, and is aimed at children, teachers, parents, and all those interested in education in entrepreneurial electronic learning games. The project's primary goal is to create an innovative digital educational game for Entrepreneurial Education for children aged 6-10, which can be used in formal, non-formal, and non-formal education environments and will be available completely free of charge throughout Europe.

The previous assertions are further reinforced by the fact that, in Europe, the main goals for the current students regarding the knowledge and skills they will need as adults, are based on the development skills such as (1) interdisciplinary skills, (2) creative and analytical skills, (3) business skills, (4) leadership skills, (5) digital and technical skills, and (6) global awareness and citizen education (The Economist Intelligence Unit, 2017).

Undoubtedly, Greece educational system has promoted relevant programmes and actions taken into account the co-variables of the centralized educational system and the limited school autonomy. Specifically, characterized programme by Junior Achievement Greece applied at all levels of Education is the Virtual Enterprise programme that referred to 15-18 year old students and based on the creation of an entrepreneurial idea. This idea should be adopted in practice via real structure and procedure. This programme is supported by Ministry of Education and external sponsors. Moreover, the succeed of Network of Entrepreneurial Schools that promote practices of entrepreneurship in Greece was based on

additional support of Ministry of Education.

Overall, the Greece educational system offer specific development actions regarding the needs of each educational level. The Business Skills Certificate offered to the Secondary Education and has an International recognition. This Certificate regarding the appropriate entrepreneurial skills (<http://senja.gr/>). A relevant certificate promoted via the Entrepreneurial Skills Pass that belongs in a Global Company Programme – Junior Achievement Greece and therefore, in National Focus Group (<http://senja.gr/>). It is important to acknowledge that collaboration and actions are based on a national level. For the same purpose, the Social Enterprise 360 was created. It targeted students and teachers in order to promote the learning and development of entrepreneurial skills. Furthermore, it was based on collaboration within 8 European Countries and supported by the Erasmus+ programme (<http://senja.gr/>). A similar educational action regarding the Virtual Enterprise programme that represent the idea of "learning by doing". The principle role is significant to succeed this action and in order to support students for creating their own company-business (<http://sen-programs.senja.gr/>).

MATERIALS AND METHODS

This article is characterized by a qualitative research approach according to the existing literature review of entrepreneurship and of the adoption of entrepreneurial practices and actions in Cyprus and Greek educational systems.

Consequently, the study adopted a specific protocol. Therefore, the study's is structure based on the following procedure: (1) Search for relevant literature (entrepreneurship education) in scientific data bases, (2) Evaluate the international scientific research sources (validity and reliability), (3) Identify the themes (entrepreneurship key elements, practices and actions, leader's role) (4) Outline the structure and (5) Writing the research study. More generally, the current study investigates the importance of entrepreneurship education in centralized educational systems.

RESULTS AND DISCUSSION

The educational systems that the business-entrepreneurial school is trying to implement should be based on their actions for understanding students' specificities, motivations, ambitions, and risks, as well as provide solutions to any obstacles that are likely to erode their skills. Therefore, entrepreneurial education should include and involve practices and actions for students from the lowest levels of education in order to observe, understand, and apply the concepts that they taught in future situations (Raponso et al., 2011). The presentation of learning outcomes related to entrepreneurial education is still incomplete and is not yet associated with a strategic priority. However, several programs were implemented, and as a result, entrepreneurial education is constantly gaining ground in primary education, although it is still more common in upper secondary education. However, it should be necessary to promote

the Entrepreneurial education from the lower educational levels in order to have student's interactions with specific practices and common knowledge.

Teachers are convinced that entrepreneurial education has several benefits, especially in primary education. They believe that if the Curriculum is restructured and essential elements of promotion and acquisition of entrepreneurship introduced, the results will be maximum. Therefore, elements should be incorporated, which promote the cultivation of the entrepreneurial spirit and the diffusion of business culture, while at the same time, teachers should participate in the relevant training by providing specific material for use (Dinaki, 2016).

The educational system has not fully been implemented regarding the full integration of entrepreneurial education. Additionally, consultants should focus on improving teaching. They inspire learners and are characterized by openness and confidence, flexibility and responsibility - but sometimes they go astray. They know how to listen, use and promote ideas, work with the student in mind and take action. Consequently, they are team players and have a good network.

Entrepreneurial education consultants seek to bridge the gap between education and economics and ensure the involvement of external experts in their teaching, focusing on real-life experiences. Simultaneously, they always refer to the economic dimension; in their courses - regardless of the scientific field - business issues play an essential role. Plato says about creative education:

"Do not educate children through coercion. Instead, guide them through good behaviors and avoid displaying some profane ones. Only in this way will you discover with certainty the degree and the areas of genius, in each child separately".

Consequently, innovation should be a key feature of pedagogy. Based on these, specific strategies have been developed, which are more widespread and fully applicable in Northern Europe and the Western Balkans, due to the development of education policies centrally by the EU (European Commission / EACEA / Eurydice, 2016). In essence, the European Commission's indicated that all young people, regardless of age, should have at least some practical business experience before completing compulsory education. Therefore, all strategies are part of a specific framework to achieve this position.

In addition, the training of teachers and counselors stems centrally are from various programs and reports - EU education policies. Specific European education policies argue that particular emphasis should be placed on initial teacher education. In particular, there will be a need for Entrepreneurial Teacher Training Institutions, specific training programs for teacher educators in the field of entrepreneurial education, development of skills and abilities in focus on teaching methods and

pedagogical methods based on entrepreneurship or innovation, networking of schools and teachers with the ultimate goal of exchange of good practices. Teachers must be aware of the needs of the labor market to relate them to their practices during the implementation of the entrepreneurial process in education.

At the same time, in addition to the initial training of teachers involved in entrepreneurial processes within the educational organization, there must be continuous professional development in this area. Lifelong learning should occur through the Schools of Entrepreneurial education, but also according to the programs for the training of active teachers in entrepreneurial education and innovative teaching methods and concepts related to entrepreneurial education. Although strategies for the promotion of continuing professional development service providers and the existence of ongoing, initiatives to support active teachers play an essential role. In conclusion, integrating entrepreneurship within the educational organization contributes to forming the global economy and modern societies.

This educational policy is characterized as a challenge for all education systems, which, if implemented by the right teachers and through specific strategies, can bring positive results at all levels.

Recommendations

The research study offers insight into entrepreneurship programs and actions in Cyprus and Greece educational systems and simultaneously, it highlights the importance of the leaders' role. The continuing changes of the 21st Century promote the need for the adoption of Entrepreneurship Education in all school organizations to reach the quality of the educational system. This study elaborates suggestions for the teachers, leaders and by extension for the educational systems in order to include Entrepreneurship education in daily use. Furthermore, future research should examine specific practices and actions in different educational systems (centralized or decentralized) and contexts in order to create a global guide for teachers and leaders. It should be mentioned that the educational systems via this study has a guide to create or improve educational policies concerning entrepreneurial practices for teachers'/leaders' preparation and professional development.

CONFLICTS OF INTERESTS

The authors have not declared any conflicts of interests.

REFERENCES

Anastasiadou D (2020). Greek Students Entrepreneurial Attitude and behavior: A multidimensional statistical analysis. *Research Institute for Entrepreneurship Development (RIED) 2(2):1-33* Hephaestus

- Repository, Neapolis University.
- Bagheri A, Harrison C (2020). Entrepreneurial leadership measurement: a multi-dimensional construct. *Journal of Small Business and Enterprise Development. Journal of Small Business and Enterprise Development 27(4):659-679.*
- Brauckmann S, Pashiardis P (2011). A Validation Study of the Leadership Styles of a Holistic Leadership Theoretical Framework. *International Journal of Educational Management 25(1):11-32.*
- Brauckmann SS, Pashiardis P, Kafa A (2019). School leadership approaches and practices under the paradigm of New Public Management - an entrepreneurial perspective. *Journal on Learning, Research and Innovation in Education 11(1): 137-155.*
- Brauckmann-Sajkiewicz S, Pashiardis P (2020). Entrepreneurial leadership in schools: linking creativity with accountability. *International Journal of Leadership in Education 25(5):787-801.*
- Charalambous M (2020). Practice and Application of Organization and Business Management, Cyprus Ministry of Education, Culture, Youth and Sports.
- Company Programme (Junior Achievement Cyprus) <http://jacyprus.org/2014/12/companyprogramme/>
- Dinaki E (2016). Entrepreneurship as an object of education in the Analytical Elementary School Curriculum, Proceedings of the 5th International Conference on the Promotion of Educational Innovation: Larissa 11-13 October 2019:669-679.
- Dinham S (2005). Principal Leadership for outstanding educational outcomes. *Journal of Educational Administration 43(4):338-356.*
- Eliophotou MM (2016). Productivity as an indication of quality in higher education: the views of employed graduates in Greece. *Quality in Higher Education 22(3):1-14.*
- Eliophotou MM, Athanasoula-Reppa A (2017). Managing Graduate Unemployment: The Case of Education Students in Cyprus. *Higher Education, Skills and Work-Based Learning 7(2):168-178.*
- European Commission / EACEA / Eurydice (2016). Business Education in European Schools. Eurydice Report. Luxembourg: Publications Office of the European Union.
- European Commission (2013). Cyprus Educational System, <https://eurydice.eacea.ec.europa.eu/national-education-systems/cyprus/overview>
- Eurydice (2012). Key Data on Education in Europe. Entrepreneurship Education at School in Europe. Available at: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Publications:Entrepreneurship_Education_at_School_in_Europe
- Eurydice Report (2021). Available at: <https://eacea.ec.europa.eu/national-policies/eurydice/>
- Frese M, Gielnik M (2014). The Psychology of Entrepreneurship. *Annual Review of Organizational Psychology and Organizational Behavior 413-438.*
- Gateway (2020). Erasmus + Opportunities. School Education Gateway Europe's online platform for school education. Available at: <https://www.schooleducationgateway.eu/en/pub/opportunities.htm>.
- Gibb A (2008). Entrepreneurship and enterprise education in schools and colleges: Insights from UK practice. *International Journal of Entrepreneurship Education 6*, Senate Hall Academic Publishing.
- Harrison C, Burnard K (2019). Entrepreneurial leadership: A Systematic Literature Review. *International Review of Entrepreneurship, 14(2):235-264.*
- Junior Achievement Greece, <http://senja.gr/>
- Junior Achievement Greece, <http://sen-programs.senja.gr/>
- Kuratko DF (2007). Corporate entrepreneurship. *Foundations and Trends in Entrepreneurship 3(2):151-203.*
- Leffler E, Svedberg G, Botha M (2010). A global entrepreneurship wind is supporting or obstructing democracy in schools: A comparative study in the North and the South. *Education Inquiry 1(4):309-328.*
- Mignenan V (2021). Collective intelligence and entrepreneurial resilience in the context of covid19. *Academia Letters Article 1842.* <https://doi.org/10.20935/AL1842>.
- Pashairdi P, Kafa A (2021). Successful school principals in Primary and Secondary Education a comprehensive review of a ten-year research project in Cyprus. *Journal of Educational Administration 60(1):41-55.*
- Pashiardis P, Brauckman S (2018). New Public Management in Education: A Call for the Edupreneurial Leader? *Leadership and Policy in Schools 18(2):1-15.*

- Pashiardis P, Brauckmann S (2008). *Evaluation of School Principals*. In G. Crow J, Lumby P, Pashiardis P (Eds.) International handbook on the preparation and development of school leaders, pp. 263-279. New York: Routledge.
- Pashiardis P, Brauckmann S (2022). Unravelling the business of educational leaders in times of uncertainty. *Educational Management Administration and Leadership* 50(2):307-324.
- Pashiardis G (2000). School climate in elementary and secondary schools: Views of Cypriot principals and teachers *International Journal of Educational Management* 14(5):224-237.
- Pauceanu AM, Rabie N, Moustafa A, Jiroveanu DC (2021) Entrepreneurial Leadership and Sustainable Development—A Systematic Literature Review. *Sustainability* 13:11695.
- Papagiannis DG (2018). Entrepreneurship Education Programs: The Contribution of Courses, Seminars and Competitions to Entrepreneurial Activity Decision and to Entrepreneurial Spirit and Mindset of Young People in Greece. *Journal of Entrepreneurship Education* 21(1).
- Pouliopoulos T, Stimuli for Social Change team (2022). *Entrepreneurship Education in Greece – challenges and a new era*. Digital Firefly
- Raponso M, Finisterra do Paço A, Ferreira MJMJ, Rodrigues GR (2011). Entrepreneurial intention among secondary students: Findings from Portugal. *International Journal of Entrepreneurship and Small Business* 13(1):92-106.
- Reppa A (2018). Entrepreneurship and school organizations. Presentation School of Education, Neapolis University Pafos.
- Reppa GP (2010). The Enjoyment of Two Teaching Programs (creative and nonreactive one) in Physical Education. The Case of 4th and 6th grade in Greek Elementary School to the proceedings of the World Conference on Educational Sciences – 4-8/2/2010 Istanbul: 2212-2216.
- The Economist Intelligence Unit (2017). An entrepreneur's perspective Today's world through the eyes of the young innovator, The Economist Intelligence Unit Limited: 1-12.
- Wilson KE (2008). Chapter 5: Entrepreneurship Education in Europe (2008). *Entrepreneurship and Higher Education*. Chapter 5 OECD. Available at SSRN: <https://ssrn.com/abstract=1392369>
- United Nations, UN (2016). *The Sustainable Development Goals Report 2016* United Nations Publications, 300 East 42nd Street, New York, NY, 10017, United States of America, pp. 1-56.
- Yemini M, Addi-Racchah A, Katarivas K (2014). I Have a Dream: School Principals as Entrepreneurs. *Educational Management and Leadership* 1-15.
<http://jacyprus.org/2014/12/companyprogramme/>
<http://www.mcit.gov.cy/mcit/mcit.nsf/All/55800C9432D0D9C6C2257C15002F899F?openDocument>
<http://www.projectcel.com/>
<http://jacyprus.org/2014/11/innovationcamp/>

Full Length Research Paper

Necessity for a paradigm shift in tertiary education in Sri Lanka: An Approach for Introducing the Conceptual Framework of a Paradigm Shift

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Paradigm shift is a significant modification of the core assumptions and methods of experimentation in a scientific discipline. The field of education, at all levels, has undergone tremendous change recently, precipitated by extraordinary demand for high quality and meaningful sustainable education at all levels across the globe. The national education system is segregated into five main categories: primary, junior secondary, senior secondary, collegiate (higher education) and tertiary. In Sri Lanka, basic and higher education levels are compulsory for students; however tertiary education is an optional level. Recent data show that just 20% of students who pass the GCE Advanced Level Test can be admitted into the government university system, leaving the remaining students with few options for higher education. The framework or for determining students' university choice based on their qualifications, talents, demand and supply characteristics, or their willingness to select an appropriate degree program is somewhat non-existent in Sri Lanka's existing educational system. To determine the steps that can be taken for a paradigm shift in higher education, this study aims to highlight the need for one in Sri Lankan post-secondary education while also proposing a relevant conceptual framework. The Marketing Mix Model for Higher Education, Hossler, Kotler and Fox, and the Integrated Complex Decision Model was the framework used to identify the demand pull and supply push factors affecting the university choice in Sri Lanka. Both qualitative and quantitative techniques were used. The study sample was drawn using stratified-sampling technique and clustered into several sub-clusters such as state university, private university, technological campus and vocational Institute. Both descriptive and essential inferential statistics tools were used for the data analysis. This study identified the measures that can be used for a paradigm shift in the tertiary education.

Key words: Paradigm shift, conceptual framework, tertiary education.

INTRODUCTION

Tertiary education portrays a determining role in the education system of a country as it directly contributes to

the sustainable development of the country. It is broadly acknowledged that tertiary education is the major driver

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Table 1. GCE (A/L) Examinations: Performance of all Candidates 2014-2019.

Year		2014	2015	2016	2017	2018	2019 (NEW)	2019 (OLD)
Number Sat		247376	255191	258193	253330	267111	187167	94619
Passed in 3 Subjects (Eligible for University Entrance)	Number	149489	155447	160520	163104	167907	113637	67489
	%	60.43	60.91	62.17	64.38	62.86	60.71	71.33
Obtained 3 A's	Number	5832	6547	7126	8267	5310	5534	1506
	%	2.36	2.57	2.76	3.26	1.99	2.96	1.59
Failed in All Subjects	Number	20377	23347	22392	22021	24057	17919	5479
	%	8.24	9.15	8.67	8.69	9.01	9.57	5.79

Source: Author Performance of Candidates, GCE(A/L) Examination – 2019 Annual Report

of the economic growth of a country. An increasingly knowledge-driven economy has made high quality tertiary education more important than ever before. For any nation, the education sector is critical for its development (El-Hilali et al., 2014). Human capital development is the core element of employees' performance which indirectly causes the growth of the economy and helps to intensify the wealth of a nation. Some people do consider education to be important, except those who excel in pre-tertiary evaluations and exams. As a result, once they land a job, their formal education is over because the majority of them believe that formal education leads to employment (Edirisinghe et al., 2022a). Education is the main pillar of the development of the human capital. Sofi (2016) stated that education enhances the quality of life of individuals and the community as a whole. Education is one of the areas where students must choose their future. The educational system plays a major role as it contributes to make the future of every country in the world. The national education system can be segregated into five main categories: primary, junior secondary, senior secondary, collegiate (higher education) and tertiary. Sri Lanka enjoys a remarkable progress, in terms of basic education indicators compared to many other developing countries in the world (Liyanage, 2014). By 1964, Sri Lanka has achieved the goal of universal primary education. After the government introduced universal free education policy in 1945, all the students from kindergarten to university education started enjoying free education facilities such as school textbooks, uniforms; also students of tertiary institutions are eligible to receive financial rebate. In Sri Lanka, tertiary education is considered as the top layer of education, which acts as knowledge link between primary and secondary education. 16 universities, 7 postgraduate institutions, 10 additional higher education institutions, and 1138 technical and vocational training institutions make up Sri Lanka's tertiary education system. There are state institutions (Liyanage, 2014). University education can be regarded as the succeeding level in the learning process of a student. It is a vital component that is necessary for the labor market.

To develop the economy of a country, knowledge

accumulation and industry-oriented application are much essential for a knowledge-based economy. Due to the competitive and evolving nature of the tertiary education sector, students' selections of academic subjects have become important. With tertiary education, individuals can expand their knowledge and life skills component. However, tertiary education always leads to the economic development of a country as it enhances productivity and efficiency of the labor force of the country. Currently, Sri Lanka is ranked as 91st out of 118 countries based on Gross Enrolment Ratio in tertiary education and higher education participation rate in the world.

From the late nineties onwards, there has been a significant improvement in higher education in East Asian countries; while Sri Lanka made a slow progress in higher education.

To gain entry into public universities, the admission system is absolutely based on GCE Advanced Level (GCE A/L) results, and it relies on the Z-score of each stream of the A/L examination. Therefore, the university admissions are extremely competitive, and the capacity, available resources in the state university system are absolutely limited. The remarkable point is that, only 20-25% from the total student population (Those who have passed GCE A/L Examination) is qualified for the university free education. Table 1 and Figure 1 show the performance of all G.C.E. A/L candidates from 2014 to 2019.

Figure 1 and Table 1 show that there is a huge competition in the university selection process in Sri Lankan education system. Even though the eligibility is high (Avg 60%) university selection is less than 25%. The modern researchers stated that a considerable portion of unemployment still exists in Sri Lanka. This is common, especially among female graduates which is approximately 30% from the labor force in Sri Lanka. Further, the faculties of Arts and Management also have higher rates of unemployment in the country (76 and 36% respectively). According to Department of Census and Statistics (2019), in 2019, 411,318 people were listed as being unemployed. According to a poll, men and women have unemployment rates of 3.3 and 7.4%, respectively.

Based on the level of education, G.C.E. (A/L) and above

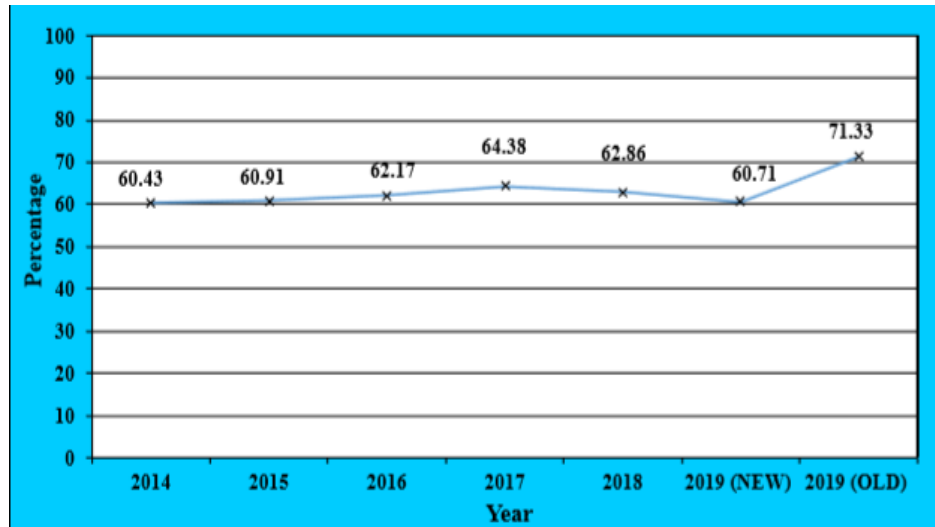


Figure 1. Percentage of all Candidates Passed in 3 subjects (Eligible for University Entrance) by Year: 2014 – 2019 - GCE (A/L) Examinations.
Source: GCE (A/L) Examination – 2019 – Candidates Performance, Annual Report.

category have the highest unemployment rate of 8.5%. For males and females, it is 5.0 and 11.9%, respectively. There were 42,024 unemployed graduates in 2019 in Sri Lanka. Among them, 54.8 percent have a degree in the Arts stream while 45.2% have other degrees.

Paradigm shift means modifying significantly the core assumptions and methods of experimentation in a scientific discipline. The phrase "paradigm shift" also refers to a significant change in the ideas and methods used to accomplish anything. A paradigm shift could function within a wide variety of context. It also can be regarded as a systematic way of thought patterns. A paradigm shift is a new way of viewing something. As we change our paradigm, we can perceive, think, feel, and act in new ways. A paradigm shift is a strategy used to deal with problems; it makes it easier to separate important information from irrelevant data. It is designed to address important issues and it is the way used to address problems. Basically, paradigms act as a way of looking into a situation and thinking and acting according to the situation. The replacement of one theory with another can result in a paradigm shift. In the current situation, the tertiary education has become even more complex as a result of changing nature and the doors are repeatedly opened for a lot of practical issues in the tertiary education system in the island. Out of many issues, one of the critical issues is the entry system and the university selection process in the country. University choice decision has become more complex; perhaps the most crucial decision in a student's life is related to his/her higher education; his/her choice of a degree program. The decision making phase of a university is very crucial for students since their whole career depends on it. Students do not choose universities randomly as it

determines their whole career and future. Poor choice can negatively impact their motivation and career path. While choosing the university they want, students consider some factors such as personal preferences, courses, job opportunities, workload, quality of teachers, university's reputation, tuition fee, academic facilities, location, parents' influence, parents' knowledge, parents' educational status, family socialization, university ranking, learning environments, graduate success, financial aids etc.

In Sri Lanka, there are a number of factors that affect students' choice of academic subjects in tertiary education: availability in public university, private university, vocational education, migrate for higher education, enter to the job market, self-employment, unemployed and not engage in education, employment or training (NEET). With free market operations, the impact of foreign and global educational flows, and institutional operations, the higher education system in Sri Lanka has undergone a significant transformation. Nearly 10,000 students are migrating for higher education in Sri Lanka (Nawaratne, 2012). Among them minority are returning with foreign educational qualifications and experience. Many Sri Lankan youths think that migration and international schooling is a way of enhancing employment prospects. D'Souza and Moore (2017) claim that because Sri Lanka's higher education system is unable to meet students' demand, particularly at the undergraduate level, the country's tertiary student population is quite mobile. A significant factor that influences students' decisions in choosing courses from the Humanities, Education, and Management (HEM) as their major is the availability of flexible payment options for degree programs. In addition, female students are more likely to choose undergraduate

HEM programs, but women still struggle to get work (Edirisinghe et al., 2021). These facts revealed that Sri Lanka is lacking a proper system for students to select suitable higher education program. Further, those programs do not aim to build their career or find a suitable job opportunity for them. This causes unemployment for degree holders. During the last decade of Sri Lanka, the unemployment rate of degree holders has increased up to 15%, while the unemployment rate of youths has increased from 18 to 28%. In this case, it can be concluded that the selection of degree programs might be not suitable for their employability and the current universities cannot meet the demand of the job market. However, there is a considerable gap between selection of degree program (STEM and HEM) and suitable job opportunities for students. Therefore, the purpose of this study is to highlight the necessity for a paradigm shift in tertiary education in Sri Lanka while making an approach of introducing a suitable conceptual framework to identify the measures that can be taken for a paradigm shift in the tertiary education.

LITERATURE REVIEW

Paradigm shift

A psychological paradigm shifts in students' appetite for and enrollment in diverse academic areas in tertiary education should result from the answer to the current issue. Universities must offer degree programs that meet companies' needs and are consistent with contemporary viewpoints in order for this exercise to be meaningful (Edirisinghe et al., 2022b).

With reference to the literary sources in the paradigm shift, Nawaratne (2012) studied on shifting paradigms of higher education in Sri Lanka with the objective of re-engineering the total higher education sector of Sri Lanka to support the long-term aspirations of Sri Lanka to take the country into next level. Study suggested changing the current education system into a modern and world class system. Researcher found that shifting from old paradigm of "Not accepting responsibility" to new paradigm of "Accepting responsibility", instead of being "Self-oriented" to being "Job market oriented", old paradigm of making "Locally employable graduates" to "Globally employable graduates", instead of being "Teacher centered" to being "Student centered", to be "Knowledge focus" to be replaced by "Knowledge, skills, attitude and mindset (K-SAM) focused". The old paradigm of "Producing only job seekers" shift into "Producing both entrepreneurs and job creators". Finally moving from old paradigm shift of "Not 100% employable graduates" to new paradigm "100% employable graduates". The majority of students choose traditional academic programs, thus everyone else, with the exception of the top private higher education institutions, would try to meet

this demand for financial gain. This circumstance may increase the "mismatch" between education and the labor market; hence, knowledge and visibility would be essential in selecting the appropriate academic discipline. A new paradigm of knowledge production in higher education may best be described as a result of the convergence of globalization, the advent of the knowledge society, and accelerated change, according to Moravec (2008). A literature survey was done to acquire information. According to the findings, higher education must adopt a systems approach to thinking and leading.

Taatila (2017) investigated the current paradigm shift in higher education around the world. According to the findings, there have been a number of significant changes in higher education during a relatively short period of time. The field of higher education has seen significant change as a result of financial constraints that have resulted in shorter accountability periods, mass education and research, as well as increasing rivalry brought on by e-enhanced globalization.

University choice

Empirical evidence

For students, post-secondary education is vital since it frequently determines their future as business owners or industry professionals (Edirisinghe et al., 2022a). One of a student's most crucial considerations is which university to attend. Using a multinomial regression model, Prakasam et al. (2019) investigated the various factors that affect students' decision to enroll in a certain course in higher education in India. 93,513 people in the age range of 5 to 29 who were enrolled in any type of educational institution were surveyed using a stratified multi-stage methodology. A number of variables, including ability, gender, the price of higher education, socioeconomic position, and geography, were taken into account to fit the multinomial regression model. The findings showed that there is clear gender polarization between the humanities and engineering. The predicated probabilities highlight the contrast between the types of courses people choose and the levels of living that are reflected in their consumption costs for professional and non-professional courses. The predicted probability of course preferences clearly show that the north, east, and NES regions prefer the humanities, while the south and west choose engineering and other professional courses.

The perks, facilities, and location of the institution may all have an impact on the students' decision to attend that institution for their education.

Using information from the Indonesia Family Life Survey (IFLS4), which was carried out by the RAND Corporation and others between 2007 and 2008, Ogawaa and Iimuraa (2010) examined the demand-side factors that affect access to tertiary education in Indonesia and

the effects of regional and family background factors on access inequity.

A multi-nominal logit model was fitted to explore what factors influence a person's decision to pursue a bachelor's program, a diploma program, or employment after graduating from high school in order to analyze the demand side factors for higher education.

According to the findings, the choice to pursue postsecondary education is significantly positively influenced by the family income per household member and the education level of the head of home. Living in an urban area does not affect one's ability to enroll in postsecondary education, access to bachelor's programs for urban residents is probably influenced by factors related to one's family background, and, if all other factors are held constant, female enrollment in diploma programs is more common than bachelor's programs for those who live in urban areas. Socioeconomic factors that influence education include parental education, household income, financial, non-financial, and material aid, language, parental involvement in a child's education, and peer group in the classroom.

Agrey and Lampadan (2014) identified various elements that go into decision-making of university choice in Central Thailand, such as support systems, both physical (e.g., bookstore, guidance/counselling office) and non-physical (scholarships, credit transferability, spiritual programming); secondly, learning environment (modern learning environment and facilities, reputation, a beautiful campus, a library, and a computer lab); job prospects (that is, a high rate of graduates being employed); thirdly, having good sporting facilities; fourthly, a strong student life program (healthcare services, residential accommodation); and activities (wide range of extracurricular activities) and finally, a safe campus as well as supportive faculty) and fifthly; a strong student; sixthly; fifthly; fourthly; a strong sports; fourthly; a strong; fifthly; fourthly; In order to investigate the institutional elements influencing students' college choice decisions in Malaysia, Ming (2010) constructed a conceptual framework (Figure 7). Location, academic program, college reputation, educational facilities, cost, financial aid availability, employment opportunities, advertising, higher education institutions (HEIs), representatives, and campus visit are the independent variables that have been identified as having influenced students' college choice decisions.

Using 1,427 participants, Mustafa et al. (2018) looked at a number of factors that influence high school students' judgments about which colleges and universities to attend in Qatar. In order to determine which independent variables—student gender, nationality, parental education, and parental occupation—significantly influence the three extracted dimensions (dependent variables), exploratory factor analysis and ordinal logistic regression were used to examine various predictors of high school students' decisions to attend college and university in Qatar.

The results show that educational expenses, cultural values, and educational quality all have an impact on people's judgments about which colleges and universities to attend. According to varied degrees, the findings of the ordinal logistic regression showed that a student's preference for a higher education institution is significantly predicted by their demographic factors. The students' choice is also influenced by institutional characteristics including advantages, facilities provided by the institution, and the location where the services are provided.

The choice of university was examined by Jafari and Aliesmaili (2013) among 381 pre-university students in the northern Iranian provinces of Gilan and Mazandaran. The cluster sampling method was used to choose the participants. This study's primary survey tool was a questionnaire. The results of the chi-square test showed that students' decisions about which universities to attend are influenced by various economic, personal, social, and university-related aspects.

Sojkin et al. (2012) examined the underlying factors behind the choices that Polish students make while pursuing their tertiary education. Focus groups' discussions and questionnaire were the survey instruments of this study. Quota sampling was used to choose 1,420 students.

The fundamental causes of the decisions are found via exploratory factor analysis. The findings indicated that family opinions and expectations, as well as a life more akin to that of a student, are the driving forces behind choices regarding pursuing higher education. Moreover, Sojkin et al. (2012) developed an integrative framework for Polish university processes. The Polish university system's integrative framework is shown in Figure 2.

Using school-level data, Çokgezen (2012) investigated the factors influencing university choice in Turkey. According to regression analysis, factors that influence university choice include tuition costs, the size of the city where the school is located, the school's academic standing, and the language of teaching. The findings also showed that public university students are more affected by tuition fees, whereas private university students are more concerned with their academic standing than their peers at public universities. Manoku (2015) also looked into the main aspects that affect an Albanian student's decision on a university. Primary data were collected from questionnaires, including those of freshmen students at 17 public and private universities in Albania. The sample was chosen through a random stratified sample method. The results of the factorial analysis have identified nine key factors (cost of study and living, quality of teaching and supporting staff, reputation of the institution, faculty facilities, accreditation, individual preferences and talents, location, perspective after graduation, and high school scores) that influence the university choice of Albanian students.

Expectations of postgraduate students from the enrichment, professional development, and skill

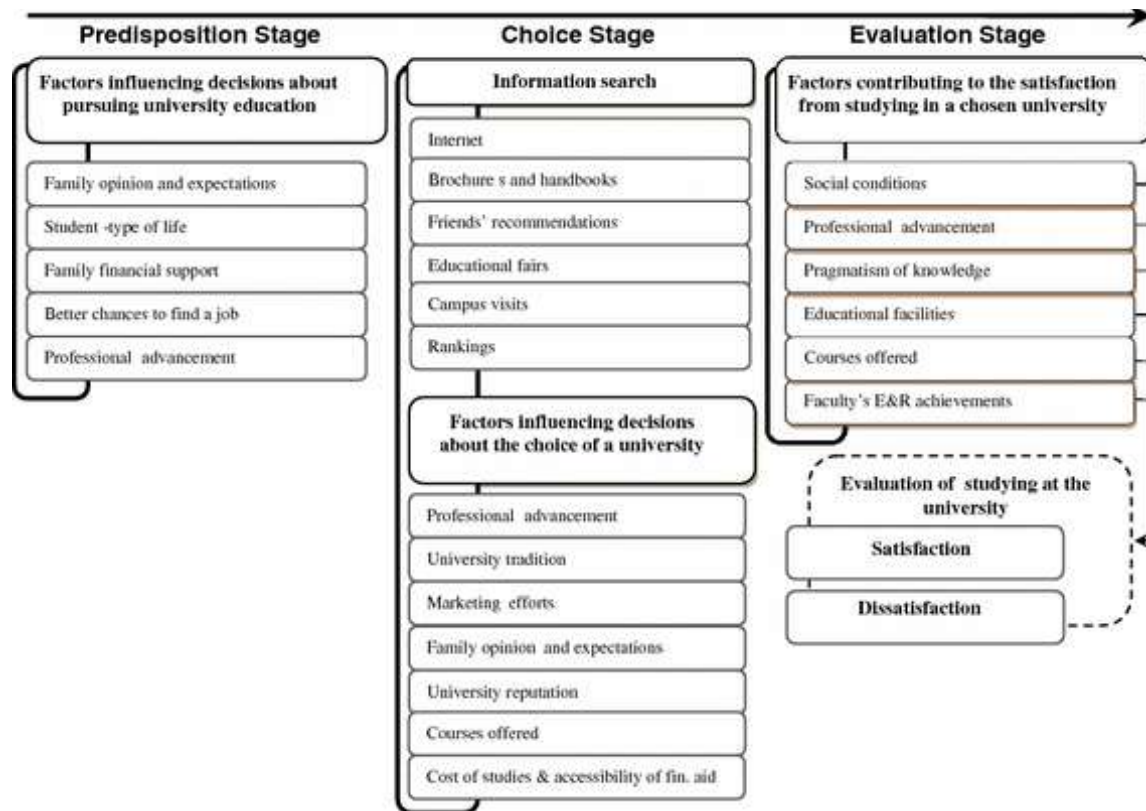


Figure 2. The integrative framework of university process in Poland.
Source: Sojkin B., Bartkowiak P. and Skuza A., 2012

acquisition, are influenced by a number of factors. The institution and department hosting the postgraduate program, which had a very good reputation in terms of quality and status (quality reasons), the cost of the postgraduate program or the possibility of a scholarship (academic reasons), the unique characteristics of the postgraduate program, such as the course schedule, duration, admission requirements, etc. (characteristics of the program), and the prospect of a scholarship were also identified as five factors influencing students' choice of postgraduate program (Siati et al., 2017). According to Binney and Martin (1997), undergraduate students at regional university campuses, such as the University of South Australia's Whyalla campus and the University of Melbourne's Glenormiston campus, heavily considered job preparation when deciding which university to attend. Students at the Whyalla campus also gave consideration to things like the school' size and distance from their homes. Nonetheless, Glenormiston students gave more weight to having access to accommodations and having the chance to do research.

The guidelines provided by the individual state tertiary entrance centers, academic sources, and the students' peers served as their primary sources of knowledge.

Khairani and Razak (2013) identified the factors that influenced students' choices of public universities by

using 1,584 prospective students from pre-university institutions. A questionnaire was the survey instrument for this study. The Rasch model analysis was used to interpret the collected data. Results showed that the participants endorsed the university's image as the most influential factor, followed by the university's environment, facilities provided, and courses offered. Kusumawati (2010) studied student choice criteria for selecting an Indonesian public university. Data were gathered through semi-structured questionnaires and focus group interviews and 48 respondents participated in this study. The result indicated that total expenses (cost), reputation, proximity, job prospect, and parents are the five most important choice criteria for Indonesian students. Further, Sarkodie et al. (2020) investigated the factors influencing students' choice of tertiary education at Sunyani Technical University. Primary data were obtained from questionnaires distributed among 200 students. In this study, convenience sampling was used to select 200 students. Descriptive and inferential statistics were used to analyze the data collected. Results revealed that reputation of the institution was a major factor in influencing the respondent's choice of a tertiary institution, followed by parental factors.

Peer and media influence were the least important factors. Further, the study showed that subject

combinations at senior high school, personal interest, career desire, employment opportunities, recognition of the program, and academic records were factors influencing students' choice of program in tertiary education. In Sri Lanka, the students' intake for state universities is extremely competitive as the capacity of the state university system is limited. The important thing is approximately only 20% of the students who qualify for university education and gain admission to the state universities. In that case, students tend to look for many other options for their higher education.

Student migration is one of them and is fairly common. Researchers discovered a number of determining factors for studying abroad. Chloe (2019) used 435 full-time foreign undergraduate and postgraduate students to research the important variables impacting international students' decision-making while choosing private HEIs in Malaysia. Cluster random sampling was employed to choose the sample. The study finds that international students' decisions to study abroad often result from their personal belief that an education abroad is superior to a degree from their own country.

Ahmad et al. (2015) investigated the push and pull factors influencing the decision to study tourism and hospitality abroad. The results found that country attraction had the strongest pull influence on the international students' study decision, followed by the pull factors of institutional attraction. Push factors included seeing and learning experiences and recommendations from various groups. Further, the image of institutions and recognition of educational qualifications are also important factors in determining the motivation and decision of international students to travel to the United Arab Emirates for tertiary education. According to Choi and Nieminen (2013), international students primarily base their decision on the university's standing and quality in the academic community, the range of academic programs it offers, and the applicability and worth of the foreign degree they receive. Lee (2014) mentioned that quality of education, the reputation and information about the institution are important factors for international higher education students. Rahman et al (2017) examined the critical factors that are influencing international students' perception in the selection of a destination for education tourism. Primary data were collected by distributing 220 questionnaires to the students. While analyzing the collected data, confirmatory factor analysis and structural equation modelling is used.

The findings showed a strong correlation between service quality and the decision to travel for educational purposes. When the destination loyalty variable plays a substantial mediating role, there is also a considerable relationship between destination brand image and the decision to choose a place for tourism or education. There was no statistically significant link between spirituality behavior and destination choice. When the visitors' goals serve as a mediating factor, there is a

considerable correlation between spirituality behavior and destination choice. To draw more international students to Malaysia to study, Malaysian tertiary education providers must match market demands and promote these together with diverse selection criteria (Baharun et al., 2011). In their study, Kunwar (2017) investigated the factors influencing the selection of higher education institutions in Finland by foreign students. The study identified main factors such as students' personal, location-specific, university-specific, program-specific, financial, future career-related, and social life-related factors. Shah et al. (2013) examined the factors influencing student choice to study at private higher education institutions in Australia. It included 120 students for this study. The study found that mainly there are six factors influencing student choice: student perception, access and opportunity, learning environments, quality of teachers, course design and graduate success.

Several local Sri Lankan students pursue studies abroad while remaining in Sri Lanka. Abeygunawardena (2018) conducted a study using undergraduates in foreign degree programs to examine the deciding criteria for choosing a bachelor's degree from private higher education institutions in Sri Lanka. For this study, 420 first-year students enrolled in overseas degree programs were randomly chosen as the sample. The standard survey tool was a questionnaire. To determine the deciding variables for choosing a bachelor's degree from private higher education institutions in Sri Lanka, factor analysis was used. The findings showed that the most important variables that influence choosing a bachelor's degree from among the foreign degree programs are infrastructural facilities, marketing strategy, cost, institution characteristics, program evaluation, messengers (sources of information), and peers.

Understanding how socioeconomic issues affect students' university selection is important. Wiese et al. (2010) looked at the selection criteria students take into account while choosing a higher education institution, concentrating on the distinctions between gender and linguistic groups. 1241 respondents were chosen based on convenience. The major survey tool was a self-administered questionnaire. With an emphasis on the distinctions between gender and language groups, multivariate analysis of variance (MANOVA) was used to study the choice factors students take into account while choosing a higher education institution. The investigation showed that the effectiveness of higher education institutions' teaching was the most crucial selection factor for respondents, regardless of gender or language.

Subsequent research revealed differences between men and women in their selection of particular choice characteristics, which implies that higher education institutions should take into account recruitment techniques for each gender group. Sovansopha (2019) examined the patterns of STEM major choices across

demographic and regional variables as well as the strong relationship between family socioeconomic position and STEM (Science, Technology, Engineering, and Mathematics) majors. In this study, 1,000 pupils were involved. Descriptive analysis and cross-tabulation statistical tests were used to analyze the data. According to the findings, students receiving government scholarships from Cambodia tended to major in social science rather than subjects connected to science and engineering. Results also showed that gender, location, and family socioeconomic position were strongly correlated with students' decisions to major in STEM. Higher socioeconomic class households, male students, and students from the provinces all had greater STEM major selection rates than their counterparts.

Using data from the 2015 International STEM Graduate Student in the US Survey, Miner (2019) investigated the relationship between gender and the choice of discipline in STEM graduate education as well as the effect of citizenship status on gender differences in STEM disciplines in the USA. In order to analyze disparities in enrollment in STEM disciplines by gender and citizenship status, this study used multinomial logistic regression analyses and gives projected probabilities. When compared to domestic men, the findings showed that domestic women were less likely to enroll in computer sciences and engineering. There were no gender variations in the enrollment of overseas students in engineering, in contrast to domestic students.

Cho (2018) studied factors influencing Myanmar students' choice of university courses with regard to their demographic and influential factors. Primary data were collected by distributing 200 questionnaires to the respondents. According to the results of inferential analysis, there are positive and inverse relationships between social factor influences, product factor influences, and students' demographic backgrounds when choosing university courses. Rosti and Chelli (2009) investigated the gender impact of tertiary education on the probability of entering and remaining in self-employment by surveying 62,000 graduate and non-graduate individuals. The results found that education significantly increases the probability of entering self-employment for both male and female graduates. It also significantly increases the transition from self-employment to dependent employment for female graduates.

Chakrabarti (2010) examined the role played by economic, social, and demographic characteristics in determining the likelihood of participation in higher education for both rural and urban youth in India. For this study, secondary data were gathered from the National Sample Survey. The findings showed that, compared to other socioeconomic groupings in rural areas, youth from scheduled caste or scheduled tribe backgrounds had much lower probability of attending a higher educational institution. The highest income/expenditure quartiles in

both urban and rural areas had a stronger gender influence on participation in higher education. Higher educational attendance was significantly influenced by elements like gender, economic and social identity, and the educational background of the family head.

In addition, a study of students' decisions to major in a particular field of study in higher education finds that female students in urban India are much more likely than their male counterparts to enroll in a university to study the arts or humanities. Even after accounting for the social and economic makeup of the household, there is a significant gender bias against women in every other stream, including science, business, medicine, engineering, and other professional fields.

In order to comprehend the impact of a number of psychological, personal, and institutional elements, Cho et al. (2008) looked at students' reports of the college decision-making process. A self-reporting, online survey was completed by 1,339 college freshman who were the first in their families to attend college. When compared to their counterparts who are not first-generation, the results showed that psychosocial characteristics and the college's academic standing had the most influence on first-generation students' college selection. However, these influences were complexly modified in various ways by gender, race, and socioeconomic position. Mahmoud et al. (2019) investigated the impact of cultural factors on international students' choice of country. Also, it looked at how much personal values might influence a student's decision regarding their home country. According to the findings of the structural equation modeling technique, the choice of country made by international students was significantly positively influenced by education, language, and social institutions.

Theoretical approaches

Theory of reasoned action (TRA)

The Theory of Reasoned Action (TRA) is used to inform our examination of the formation of, and changes to, students' attitudes and interests. It is a model that can be used to predict behavior and action toward an object. Behavior is largely determined by intention. The stronger the intention, the more likely it is that the behavior will occur. Intention is comprised primarily of three inputs, informal STEM programs (e.g., attitude toward the behavior), subjective norms, and perceived control and self-efficacy. TRA can be applied to the fields of social psychology (with applications in marketing), science education, the arts, and sociology (Tretola et al, 2019). Figure 3 shows the Theory of Reasoned Action (TRA). Tretola et al. (2019) applied the TRA to construct a conceptual framework for the study examining the impact of a university STEM program along with "hands-on" activities that include the arts. For each STEM topic, the

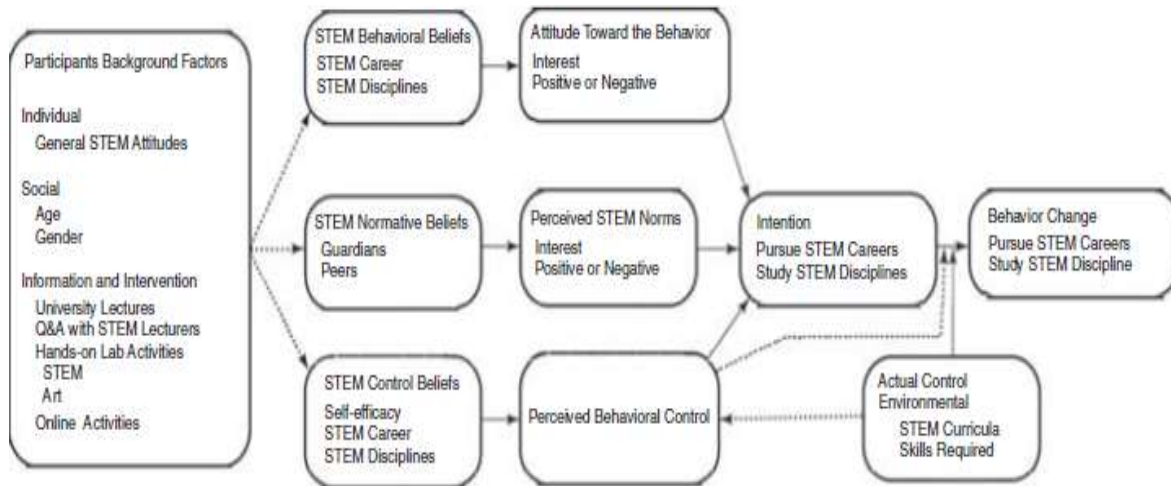


Figure 3. The Theory of Reasoned Action (TRA).
Source: Tretola et al., 2019.

results showed that interest grew noticeably for students who had expressed low interest in the initial pre-lecture survey using paired samples t-tests. Using a repeated measures general linear model, it was found that interest in engineering significantly improved linearly. Parents or guardians noted a greater interest in STEM fields, which led to more technical conversation among peers and within the family.

Trey L. Mitchell's model of career-decision making

Trey L. Mitchell's model of Career-Decision Making assumes that a decision-maker will create a set of preferences or priorities when considering possible alternatives. The framework shows that the interaction between a person and his behavior is influenced by his thoughts and actions, while the interaction between a person and the environment involves beliefs and cognitive competencies developed and modified by social influence. The interaction between the environment and the behavior involves a person's behavior determining his environment which, in turn, affects his behavior. These preferences will help the decision-maker distinguish between choices based on the values assigned to possible alternatives (Malubay et al., 2017). Following Figure 4 shows Trey L. Mitchell's model of Career-Decision Making.

In their study, Malubay et al. (2017) applied Trey L. Mitchell's model of career-decision making to investigate the factors affecting the decisions of freshmen students in pursuing hospitality and tourism programs at the University of the Philippines, Laguna. The results showed that the respondents were mostly between the ages of 17 to 19, female, Filipino, International Travel and Tourism

Management students, and financially capable. Furthermore, economic factors such as stable wages and job demand are the most important considerations for students pursuing Hospitality and Tourism programs. Significant relationships were also found between age and social factors, and nationality and economic factors. The majority of research use one of the four models below to explain how students choose their universities: economic models, sociological models, integrated models, and marketing strategies.

Economic models

Economic models emphasize choice between enrolment in a college or university and the pursuit of a non-collegiate alternative (Reddy, 2014). These models often start with the premise that a student seeks to increase benefit while minimizing risk. The economic models' drawback is that they only consider how students' rationality affects their decisions. Economic models of college selection are predicated on the idea that students make rational decisions by weighing all the information at their disposal in light of their preferences at the time of the decision (Aydin, 2015). The economic model that Jackson proposed in 1982 is crucial for determining which colleges students choose to attend.

These models typically start with the premise that a student wants to increase his or her utility and reduce risks. Because they only consider how students' rationality affects their decisions, economic models have this drawback. Students are assumed to act rationally by weighing all the information at their disposal in light of their desires while making decisions, according to economic models of university selection (Aydin, 2015).

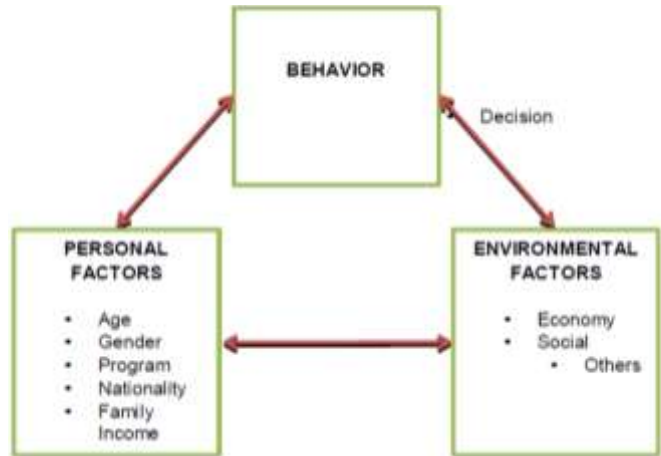


Figure 4. Trey L. Mitchell's model of Career-Decision Making. Source: Malubay et al., 2017.

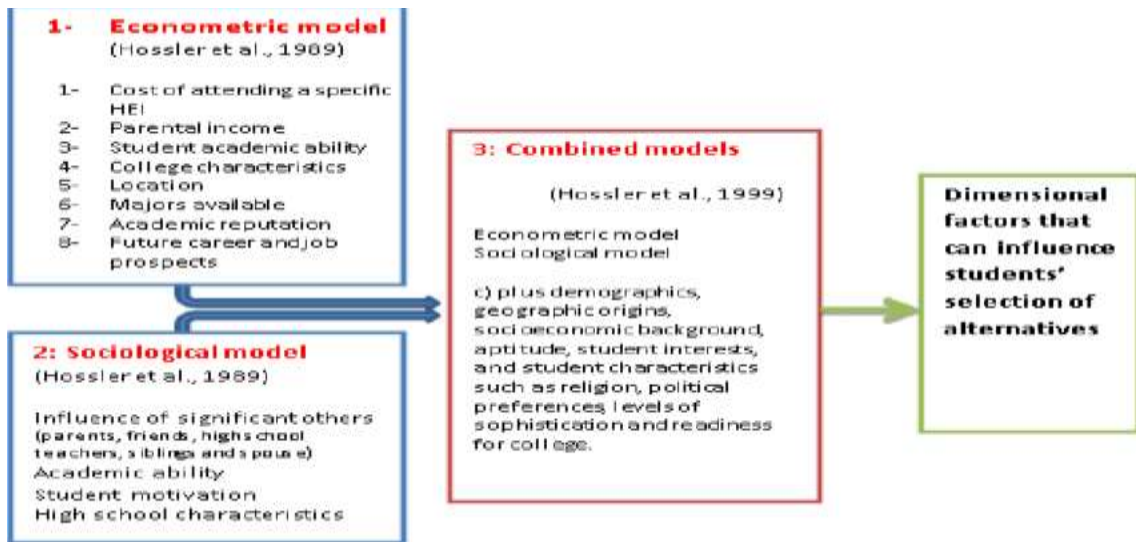


Figure 5. Hossler Dimensional Factors model. Source: Hossler et al. (1999).

The economic model that Jackson proposed in 1982 is the most significant factor in students' college selections.

Hossler dimensional factors model

Dimensional factors model consists of economic model, sociological model and combined model. Hossler (1999) reveals the dimensional factors of student selection is further suggested that program cost, parental income, location, reputation of the academic institution and future job prospects belongs to economic model whereas peer influence, academic ability, student motivation, higher education characteristics belong to sociological model

and demographic and geographic origins, political preferences belongs to combined model to measure the dimensional factors that influence the students' choice of the university program selection. Figure 5 shows Hossler Dimensional Factors model.

Marketing mixed model for higher education

Kotler and Fox (1995) introduced a marketing mixed model for higher education which consists of seven elements such as the program, the place, the price, the promotion, the physical facilities, the people and the process. Similarly, the student choice is a part of

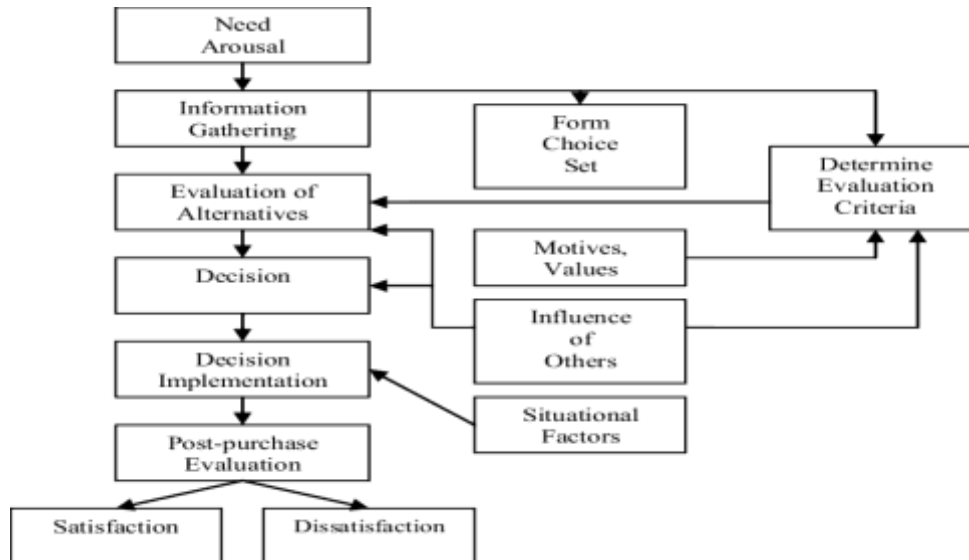


Figure 6. Combined Complex Decision model. Source: Holdsworth and Nind, 2006.

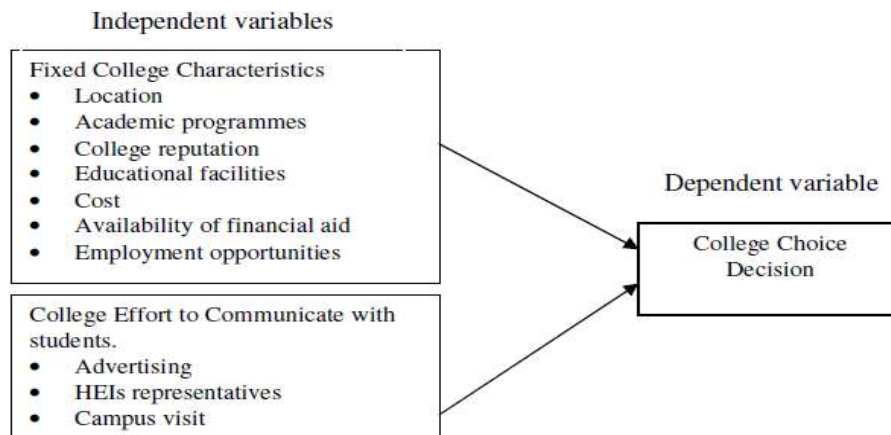


Figure 7. Proposed conceptual framework. Source: Ming, 2010.

consumer behavior that is how individuals or group select and use goods or services. To select a university, students have five steps of choice: there are needs and motives, information gathering, evaluating alternatives, decision making and post choice evaluation.

Combined complex decision model

This model, developed by Holdsworth and Nind in 2006, identified a number of variables that affect a student's decision regarding a university, including cost, geographic proximity to home, the quality and flexibility of the degree and course options, the availability of housing, the

likelihood that an employer will hire from that university, and the availability of accommodation. Figure 6 shows the combined complex decision model.

METHODOLOGY

The conceptual framework is introduced to examine the necessity of a paradigm shift in tertiary education system in Sri Lanka. In order to establish a suitable conceptual framework to measure the paradigm shift, archived literature reviews, case studies, assumptions, different conceptual frameworks, models and theories are utilized. The proposed conceptual framework consists of both demand and supply side of the tertiary education; it narrates the university selection process (Choice) in a dynamic level.

Table 2. Unemployment of the Graduates – 2019 (Age 20 and above).

Type of the degree	Total	%
Total no. of unemployed graduates	42.024	100.0
Art degree	23.040	54.8
Other degrees	18.984	45.2

Source: Sri Lanka Labor Force Survey (2019), Department of Census and Statistics

The conceptual framework of this study is focusing the influencing factors affecting for the demand side, and the factors affecting to supply side in terms of making the decision of university selection.

The factors influencing the supply side of the job market include the entry of public universities, private universities, vocational education institutes, students' migration for higher education, new entrants to the job market, self-employment, and unemployed or NEET (Not in Education, Employment or Training). On the demand side, the factors influencing the job market are private sector organizations, public sector organizations, and those who migrate for work. These factors influencing the supply side can also be seen as psychological paradigm shifts. The conceptual framework is based on the theoretical frameworks of the archived literature reviews and the demand and supply side of the conceptual framework are based on the following two theoretical models.

1. Dimensional factors of student selection by Hossler (1999)
2. Marketing mix model for higher education by Kotler and Fox (1995)

Dimensional factors of student selection by Hossler (1999) belong to demand side of the conceptual framework. The Dimensional Factors model consists of the economic model, sociological model, and combined model, and it shows the factors affecting university selection from the demand side. Hossler (1999) reveals the dimensional factors of student selection is further suggested that program cost, parental income, location, reputation of the academic institution and future job prospects belongs to economic model whereas peer influence, academic ability, student motivation, higher education characteristics belong to sociological model and demographic and geographic origins, political preferences belongs to combined model to measure the dimensional factors that influence the students' choice of the university program selection.

The supply side of the conceptual framework is home to Kotler and Fox's (1995) marketing mix model for higher education. It demonstrates the supply-side factors influencing university choice. The program, the place, the pricing, the promotion, the physical facilities, the people, and the process are the seven components of Kotler and Fox's (1995) marketing mixed model for higher education. Similar to how people or groups choose, acquire, and use products and services, student choice is a component of consumer behavior. Students have five factors to take into account when choosing a university: needs and motivations, information gathering, assessing options, decision-making, and post-choice evaluation. Figure 8 shows the proposed conceptual framework for the study.

DISCUSSION

Analysis

The proposed conceptual framework covers both

demand and supply side elements which focuses for a psychological paradigm shift in the tertiary education in Sri Lanka. Reference to the admissions to the public universities is completely based on A/L results and similarly it relies on the Z-score of each stream of the A/L examination. Therefore, the admissions are extremely competitive, and the capacity, available resources of the state university system is absolutely limited. The crucial factor is approximately only 20% of the students who qualify for university education and gain admission to the state universities. 20% of the students who obtain the opportunity to enter to the university education have multiple options that they can choose as their next step of the journey: enter to public universities, enter to private universities, vocational education and migrate for higher education. Some students study both in private and public-sector universities simultaneously. Around 250,000 students get enrolled to vocational education system in Sri Lanka. Nearly 10,000 students are migrating for higher education in Sri Lanka. In addition to those students, there are some students who qualified for the public university or ability to enter to a private university for their higher education, they enter to the job market, or they started their own businesses (self-employment). Nowadays, students are finding the reasons to leave the university program and go to the job market easily. The reasons include four years' education system that Sri Lankan has, parents' influence, economic status of the family etc.

The students who do not meet the entry qualifications for university education in the country, estimated to be 83% of the total A/L passed out annually, have several opportunities in the market, such as entering private universities, pursuing vocational education, migrating for higher education, entering the job market, becoming self-employed, becoming unemployed, and becoming NEET (young people Not in Education, Employment or Training). These can be regarded as paradigm shifts in the tertiary education system in Sri Lanka. The unemployment rate is currently at 9.7%, which is a stark contrast to the 83% employment rate prior to the pandemic. This means that 17% of the population is now unemployed, even if they have completed tertiary education. Table 2 shows the estimated unemployment rate among persons aged 20 years and above who are graduates.

Table 3. Youth not in employment, education, or training (NEET) by gender, 2014-2019.

Gender	Year					
	2014	2015	2016	2017	2018	2019
Total	790.170	734.550	750.864	674.009	668.331	647.863
Male	242.421	224.501	234.616	212.226	216.246	202.043
Female	547.749	510.049	516.247	461.783	452.085	445.820

Source: Sri Lanka Labor Force Survey (2019), Department of Census and Statistics.

Table 4. NEET rate (NEET group as a percentage to total youth) by gender 2014 – 2019.

Gender	Year					
	2014	2015	2016	2017	2018	2019
Total	27.8	25.8	26.1	22.7	21.8	21.2
Male	17.6	16.3	17.0	14.8	14.4	13.3
Female	37.4	34.6	34.5	30.2	29.0	29.0

Source: Sri Lanka Labor Force Survey (2019), Department of Census and Statistics.

As per Table 2, the unemployed graduates, about 54.8% are Art degree holders while the other 45.2% consist of other degree holders.

NEET segment can be defined as “young people Not in Education, Employment or Training”. It considers all young people who are not employed and inactive in the age group (15 – 24 years). This portion of youth does not get any opportunities to enter to the next level of education. Around 24% of youth are NEET which is employment, education, or training for different social and cultural reasons. NEET rates capture the non-utilized labor potential of the population and can also be used to identify individuals who may be at risk of future difficulties. Table 3 indicates NEET by gender from 2014 to 2019.

Table 3 depicts that the number of female youth not in employment, education or training is higher than that of male youth in all years from 2014 to 2019. The total NEET group is fluctuating over the period from 2014 to 2019, with the estimated value for NEET in 2015 being approximately 0.6 million. The NEET group is composed of those who are unemployed, not engaged in education and not attending any training. Unemployed youths who have successfully completed formal professional/technical training and are not actively searching for jobs may indicate the presence of an idling or disappointed youth labor force in the country's labor market. Table 4 indicates the percentage of NEET by gender from 2014 to 2019.

Table 4 shows that approximately one out of every five youths belong to the NEET group. This increases up to one out of three for female youth. NEET rate is significantly higher for female compared to male.

Based on the supply side of this framework, students eventually make their way to the labor market and end up with employment in both the private and public sectors. Aside from that the migration to another country has become even more trending. Assuming a particular student enters to the job market, the graduate most probably works in a private sector organization or public-sector organization. However, those who do not enter private sector or public-sector organizations tend to migrate for overseas employment. This makes it easy to identify the current job skills required, as well as any skill gaps or emerging skill requirements in the island. This shows the demand and supply side of the conceptual framework. Reference to the first research question and the primary objective of the study, those who have gone through the tertiary education after A/L, it is necessary to understand what the driving factors for the selection of the course and the program are, or perhaps is solely student's choice or someone else's dream to achieve it. The second question is to identify the driving factors for different institutions. Even though some students have been selected to the public universities, they may not enter due to various issues. They may enter private universities while considering the many benefits they offer. Some students also choose to enroll in either private and public universities or institutions at the same time (e.g. CIMA, ACCA, CIM). When it comes to migration for higher education, there is a tradeoff between local verses international migration. People assume that people who have money going abroad for higher education. But it is completely wrong because families without having three meals also try to send their children to abroad for higher education. Therefore, it is necessary to understand

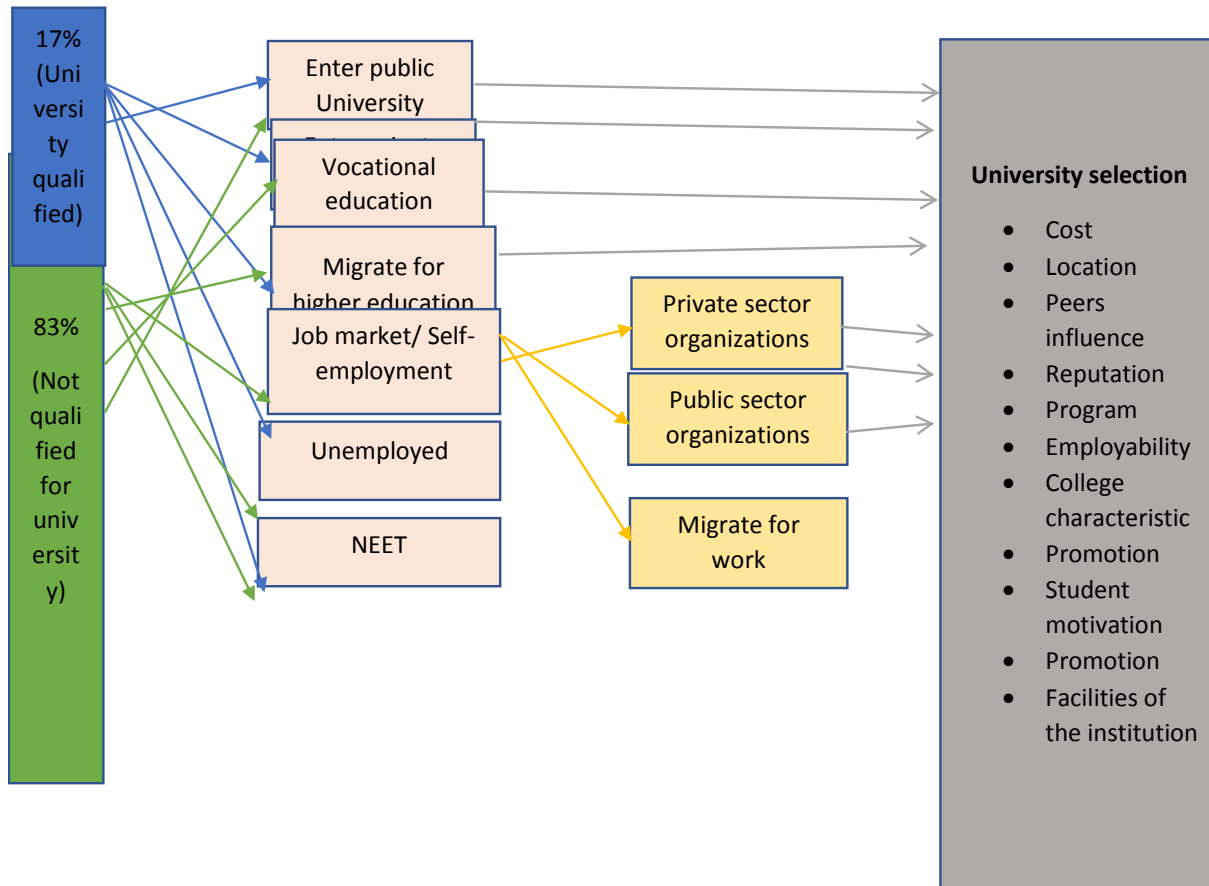


Figure 8. Conceptual framework.
Source: Author

what the tradeoff is they are expecting by choosing migration for higher education without staying local for higher studies.

Considering those who are moving to job market or self-employed has become a trend today. Researchers have clearly identified that youth groups in the market have a huge hesitation and unwillingness to enter to the universities. It is the main reason that influence youth to self- modem. However, they do not know anything about the gravity on self- employment. The unemployment and barriers to unemployment are also extremely crucial. Even though the employment opportunities exist some are voluntarily unemployed due to many reasons. Perhaps the reasons may be the family choices, parents' influence, the culture of the country and etc.

Conclusion

This study is aimed to highlight the necessity for a paradigm shift in tertiary education in Sri Lanka. Similarly, it also proposes a suitable conceptual framework to measure the identify of respective paradigm shift in the

tertiary education in the Sri Lanka. The proposed mechanism consists of demand pull and supply push factors of the tertiary education. Figure 9 (Proposed conceptual framework) identify the demand pull and supply push factors to measure the phycological paradigm shift in the tertiary education in Sri Lanka.

The factors influencing the supply side include enrolling in public universities, enrolling in private universities, pursuing vocational education, migrating for higher education, entering the job market, engaging in self-employment, and being unemployed or NEET (Not in Education, Employment or Training), while the factors influencing the demand side include private sector organizations, public sector organizations, and migrating for work. The factors influencing the supply side of tertiary education in Sri Lanka can also be regarded as a psychological paradigm shift, which focuses on a fundamental change in the basic concepts and experimental practices in the sector.

CONFLICT OF INTERESTS

The authors have not declared any conflicts of interests.

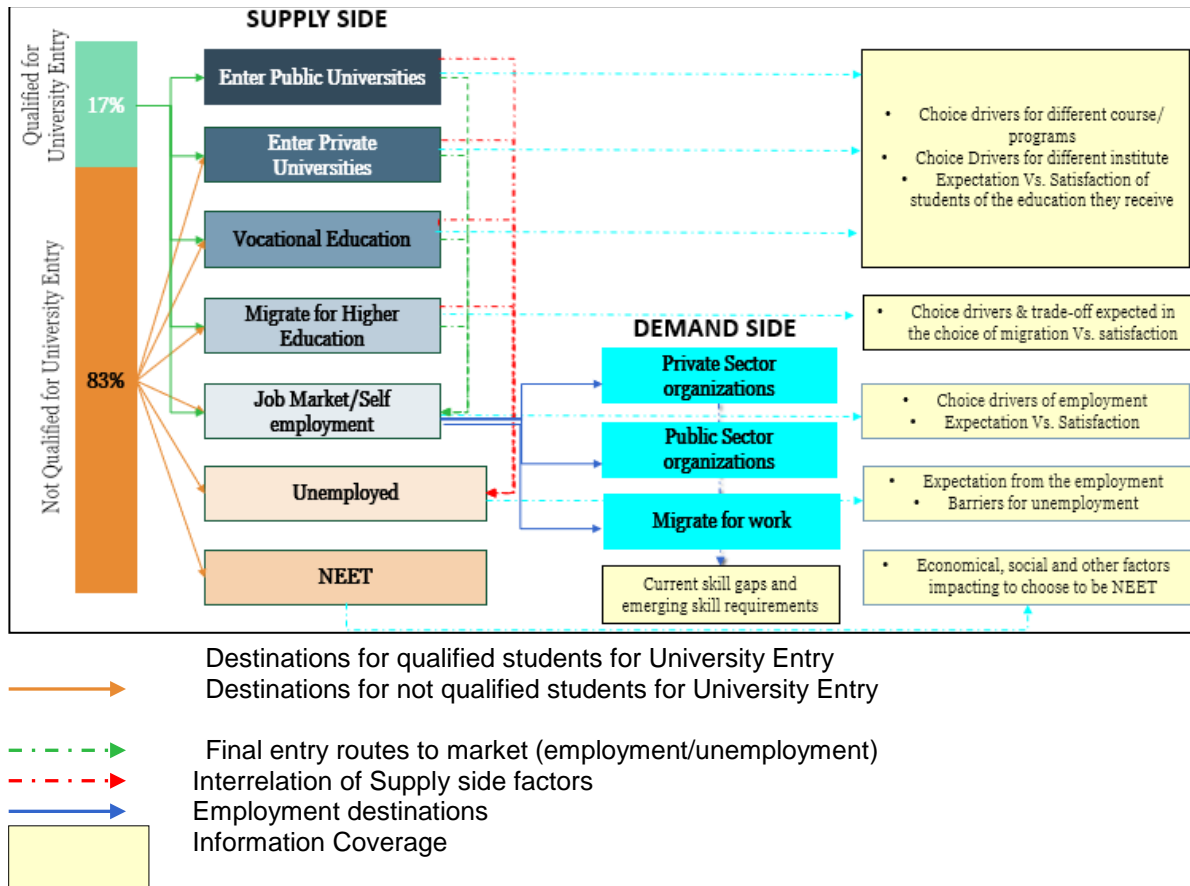


Figure 9. Conceptual framework.
Source: Author

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REFERENCES

Abeygunawardena KAV (2018). Influential Factors in Selecting a bachelor's degree from Private Higher Educational Institutes in Sri Lanka: A Study Based on Undergraduates of International Degree Programmes. *International Journal of Social Sciences* 4(2):75-96.

Agrey L, Lampadan N (2014). Determinant Factors Contributing to Student Choice in Selecting a University.

Ahmad SZ, Buchanan FR, Ahmad N (2015). Examination of students' selection criteria for international education. *International Journal of Educational Management*.

Aydin OT (2015). University Choice Process: A Literature Review on Models and Factors Affecting the Process. *Journal of Higher Education/Yükseköğretim Dergisi* 5(2).

Baharun R, Awang Z, Padlee SF (2011). International students' choice criteria for selection of higher learning in Malaysian private universities. *African journal of Business management* 5(12):4704.

Binney W, Martin C (1997). How Do Rural Students Choose Their

Higher Education Institutions? Two Regional Australian Cases. *Journal of Institutional Research in Australasia* 6:74-80.

Chakrabarti A (2010). Determinants of Participation in Higher Education and Choice of Disciplines: Evidence from Urban and Rural Indian Youth. *South Asia Economic Journal* 10(2):371-402.

Chloe TWS (2019). Investigating Key Factors Influencing International Students' Choice of Private Higher Education Institutions (HEIs) in Malaysia.

Cho SJ, Hudley C, Lee S, Barry L, Kelly M (2008). Roles of Gender, Race, and SES in the College Choice Process among First-Generation and Non-First-Generation Students. *Journal of Diversity in Higher Education* 1(2):95.

Cho YZA (2018). A study on the factors influencing Myanmar students' choice of university courses.

Choi S, Nieminen T (2013). Factors influencing the higher education of international students from Confucian East Asia. *Higher Education Research & Development* 32(2):161-173.

Çokgezen M (2012). Determinants of University Choice: A Study on Economics Departments in Turkey. *Yükseköğretim Dergisi* 4(1):23-31.

Department of Census and Statistics. (2019). Sri Lanka Labour Force Survey, Colombo: Department of Census and Statistics.

Edirisinghe L, Ranwala L, Siriwardena S (2021). Shaping the Education to Meet the Global Demands: Industrial Inclusiveness in University Curriculum. *Sustainable Development Research* pp. 28-38.

Edirisinghe L, Siddhisena K, Siriwardena S, Ranwala L (2022a). Creating a Psychological Paradigm Shift in Students' Choice for Tertiary Education in Sri Lanka: The Influence of Socioeconomic Factors. *Journal of Educational Administration and Policy Studies* pp.

- 1-16.
- Edirisinghe L, Siriwardena S, Ranwala L (2022b). Creating a Psychological Paradigm Shift in Students' Choice in the Tertiary Education in Sri Lanka through Education Vertical Integration. *International Journal of Educational Administration and Policy Studies* pp. 72-78.
- El-Hilali N, Al-Jaber S, Hussein L (2014). Students' Satisfaction and Achievement and Absorption Capacity in Higher Education. *GKI*. (2022). Sri Lanka. Retrieved from <https://knowledge4all.com:https://knowledge4all.com/admin/CountryProfiles2021/LKA-en.pdf>
- Holdsworth KD, Nind D (2006). Choice modelling New Zealand high school seniors' preferences for university education. *Journal of Marketing for Higher Education* 15(2):81-102.
- Hossler D, Schmit J, Vesper N (1999). *Going to college: How social, economic and educational factors influence the decisions students make*, Johns Hopkins Press, Baltimore.
- Jafari P, Aliesmaili A (2013). Factors Influencing the Selection of a University by High School Students. *Journal of Basic and Applied Scientific Research* 3(1):696-703.
- Khairani AZ, Razak NA (2013). Assessing Factors Influencing Students' Choice of Malaysian Public University: A Rasch Model Analysis. *International Journal of Applied Psychology* 3(1):19-24
- Kotler P, Fox K (1995). *Strategic marketing for educational institutions*, Upper Saddle River, NJ: Prentice Hall.
- Kumar C, Singh SP, Nauriyal DK (2014). Correlates and Issues of Academic Course-Selection in Post-Secondary Education in India: Evidence from National Sample Survey 2007-08. *Open Access Library Journal* 1(3):1-22.
- Kusumawati A (2010). Student Choice Criteria for Selecting an Indonesian Public University: A Preliminary Finding.
- Lee CF (2014). An investigation of factors determining the study abroad destination choice: A case study of Taiwan. *Journal of Studies in International Education* 18(4):362-381.
- Liyanage IMK (2014). Education system of Sri Lanka: Strengths and weaknesses. *Education system of Sri Lanka* pp. 116-140.
- Mahmoud MA, Oppong E, Twimasie D, Hussein MM, Kastner ANA, Oppong M (2019). Culture and country choice of international students: evidence from Ghana. *Journal of Marketing for Higher Education* 30(1):105-124.
- Malubay GJJ, Mercado KAO, Macasaet E (2017). Factors affecting the decision of freshmen students in pursuing hospitality and tourism programs in lyceum of the Philippines university–Laguna: basis for enhancement. *LPU–Laguna Journal of International Tourism and Hospitality Management* 3(1):23-48.
- Manoku E (2015). Factors that influence university choice of Albanian students. *European Scientific Journal* 11(16).
- Miner MA (2019). Unpacking the monolith: Intersecting gender and citizenship status in STEM graduate education. *International Journal of Sociology and Social Policy*.
- Ming JSK (2010). Institutional Factors Influencing Students' College Choice Decision in Malaysia: A Conceptual Framework. *International Journal of Business and Social Science* 1(3).
- Moravec JW (2008). A new paradigm of knowledge production in higher education. *On the horizon*.
- Nawaratne SJ (2012). Shifting paradigms of higher education in Sri Lanka. In *Workshop Proceedings* P 75.
- Ogawaa K, Imuraa K (2010). Determinants of Access and Equity in Tertiary Education: The Case of Indonesia. *Excellence in Higher Education*. P. 1.
- Prakasam GR, Mukesh, Gopinathan R (2019). Enrolment by academic discipline in higher education: differential and determinants. *Journal of Asian Business and Economic Studies* 26(2):265-285.
- Rahman MS, Osmangani AM, Raman M (2017). Destination selection for education tourism: Service quality, destination image and perceived spirituality embedded model. *Journal of Islamic Marketing* 8(3):373-392.
- Ranwala L, Siriwardena S, Kurukulaarachchi V, Edirisinghe L (2020). Determinants of university choice for the academic disciplines in the tertiary education in Sri Lanka.
- Reddy VP (2014). The influence of social media on international students' choice of university and course. (Doctoral dissertation, Queensland University of Technology).
- Rosti L, Chelli F (2009). Self-employment among Italian female graduates. *Education+ Training*.
- Sarkodie NA, Asare A, Asare D (2020). Factors Influencing Students' Choice of Tertiary Education. *ADRRJ Journal (Multidisciplinary)* 28(11(5)):58-92.
- Mustafa SAA, Sellami AL, Elmaghraby EAA, Al-Qassass H B (2018). Determinants of college and university choice for high-school students in Qatar.
- Shah M, Nair CS, Bennett L (2013). Factors influencing students' choice to study at private higher education institutions. *Quality Assurance in Education*.
- Sofi SY (2016). Factors determining choice of stream at secondary level education. *Imperial Journal of Interdisciplinary Research* 2(8)39-45.
- Sojkin B, Bartkowiak P, Skuza A (2012). Determinants of higher education choices and student satisfaction: the case of Poland. *Higher education* 63:565-581
- Sovansophal K (2019). Family socioeconomic status and students' choice of STEM majors' evidence from higher education of Cambodia. *International Journal of Comparative Education and Development* 22(1):49-65.
- Tretola B, Coupey E, Meamber L (2019). Multidisciplinary impact – the arts join informal STEM programs. *Arts and the Market* 9(1):81-94.
- Wiese M, Heerden CHV, Jordan Y (2010). The role of demographics in students' selection of higher education institutions. *Acta Commercii* 10(1):150-163.

Full Length Research Paper

The impact of work-family conflict on work engagement of female university teachers in China: JD-R perspective

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This paper takes work-family conflict as the independent variable, work engagement as the dependent variable, and perceived organizational support and emotional exhaustion as the mediating variables, and studies the influence of work-family conflict on work engagement and the mechanism of perceived organizational support and emotional exhaustion of female university teachers in China, based on the job demand-resource model (JD-R). The results of the questionnaire survey of 518 female university teachers revealed a significant negative relationship between work-family conflict and work engagement, with a direct effect accounting for 31.88%. The indirect effect of work-family conflict on work engagement through perceived organizational support was significant, accounting for 63.19%, while the mediating effect of emotional exhaustion was not notable and the chain mediating influence of perceived organizational support and emotional exhaustion was not significant.

Key words: Work-family conflict, work engagement, emotional exhaustion, perceived organizational support.

INTRODUCTION

With the development of the times, the society's expectations of education are getting higher and higher, which also puts forward higher requirements for teachers' teaching involvement (Filho et al., 2021). High-level teaching requires teachers' full input of emotion, energy and time. The amount of teachers' input in teaching directly determines the level of school teaching and the quality of classroom effect (Watts and Robertson, 2011). In addition to daily teaching, female university teachers also need to complete scientific research, social services, promotion of professional titles, promotion of academic qualifications and other pressures. In modern society, the

requirements for female university teachers are no less than those for male workers. At the same time, influenced by the traditional division of labor, cultural concepts and role expectations, it is regarded as a natural responsibility and obligation for female university teachers to take care of their husbands and children and do housework (Okpara et al., 2005). The society's expectation of the double roles of work and life of university female teachers makes the work-family conflicts faced by female university teachers increasing. Unbalanced work-family conflict is the main problem of female university teachers' work engagement (Fox et al., 2011). The study of the

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current situation of female university teachers' work engagement would deepen the understanding and understanding of female university teachers, so as to take positive measures to help female university teachers improve their work engagement enthusiasm (Wang et al., 2011).

Schaufeli et al. (2006) job demand-resource model tells us that job demands (high job stress, role conflict, etc.) can predict job burnout; resources (self-efficacy, organizational support, etc.) can predict work engagement. Employees vary in their level of work engagement because of differences in the resources they can consume while working (Kwon and Kim, 2020). Abundant work and personal resources contribute to employees' work engagement, and resources are the boundary condition that regulates the relationship between work requirements and job engagement. Existing research has proved that organizational support can alleviate the negative effects of stress and provide individuals with the capital to cope with stress and challenges (Loi et al., 2014). The higher the perceived organizational support, the more personal resources an employee has (Fox et al., 2011). However, previous studies on the adverse influence of work-family conflict on work involvement only focus more on the moderating influence of job resources rather than personal resources. In addition, under Chinese cultural background, the study found a widespread and strong social norm of work priority, a stronger tolerance of work interfering with family, and it is a traditional virtue to work hard at the expense of personal family (Gao, 2021; Lin et al., 2013). Therefore, in order to find a new boundary, this study will start from the job demand-resource model (JD-R) to explore whether personal resources and organizational resources are important trade-offs for female university teachers in the face of work-family conflict affecting work engagement under Chinese cultural background.

Research models and hypothesis

Research model

The JD-R model holds that there are two paths for work to affect employees: loss and gain. The attrition path, or health attrition process, is defined as job burnout caused by excessive job demands and lack of job resources, which in turn leads to negative organizational results, like sick leave, low job performance, and low organizational commitment (Schaufeli et al., 2006). When job demands (negative factors) continue to be high and are not compensated by job resources (positive factors), employees' energy will continue to be depleted in the process of work, which may eventually lead to emotional exhaustion, which will have an adverse influence on individuals (such as health issues) and organizations (like

job performance). Gain path, namely motivation process, is triggered by abundant work resources, and has a positive influence by improving staff's work engagement, such as high organizational commitment, high intention to stay, high job performance and so on. Increasing work resources (like social support, work autonomy and feedback) has the effect of "killing two birds with one stone": inhibiting burnout and growing work engagement (Kwon and Kim, 2020). Therefore, based on the JD-R model, the research explores the connection among work-family conflict, emotional exhaustion, perceived organizational support and work engagement of female university teachers, and constructs a research model of work-family conflict on work engagement of female university teachers. It's shown as Figure 1.

Research hypothesis

The connection between work-family conflict and emotional exhaustion

Greenhaus and Beutell (1985) define work-family conflict as "an inter-role conflict that arises between pressures within the work and family domains and is irreconcilable in some ways". Relevant research shows that work-family conflict has an adverse influence on health (mental and physical), satisfaction, performance and commitment (Frone et al., 1992). The role load and stress brought by work-family conflict will cause individuals to have negative psychological and physical symptoms such as tension and burnout, thus reducing job satisfaction and life satisfaction, affecting job performance and quality, and also reducing organizational commitment, leading to exit behaviors such as absenteeism and turnover (Bowen and Zhang, 2020). Emotional exhaustion is a mental manifestation of pressures, which is section of work burnout. It usually appears when people use out emotional and psychological resources, and may result in higher turnover rates and lower performance levels (Maslach et al., 2001). According to the JD-R model, any job's traits can be divided into job demands and job resources, in which job demands are the "negative aspects" that deplete personal work energy, like work-family conflict in this study (Bakker et al., 2014). On the contrary, work resources are "positive aspects" in work, like psychological and physiological costs. One of the core assumptions of the model is that there is a work attrition path for employees, that is, the health attrition process, which is caused by job burnout caused by excessive job requirements and lack of work resources, and then leads to negative organizational outcomes. In the basis of the above theoretical results, the research proposes the below hypotheses:

Hypothesis 1: Work-family conflict positively affects emotional exhaustion

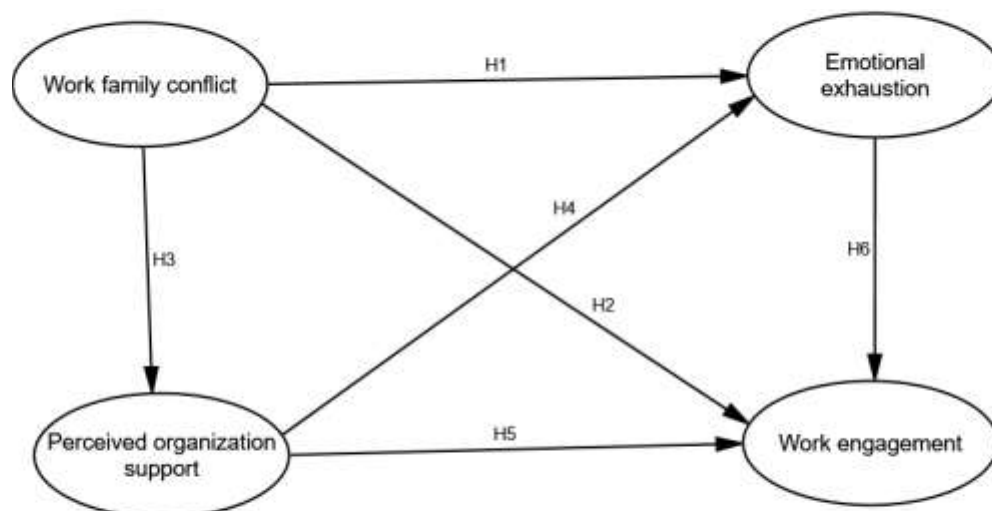


Figure 1. Author Theoretical framework model.
Source: Author.

The connection between work-family conflict and work engagement

Many factors influence work engagement, like individual emotion, organization and so on (Lyu and Fan, 2020). Family and work conflict will affect personal mood and state, consume personal energy, lead to the generation of negative emotions and the increase of pressure, and employees will bring negative emotions to work will affect work engagement (Schaufeli et al., 2006). Based on the JD-R model, individuals play multiple roles with different needs and uneven distribution of resources. Individuals have their own cognition and evaluation of resource input, and make choices in the trade-off of obtaining, preserving resources and effective stop-loss (Bakker et al., 2014). For female employees, it is difficult to balance family roles and work roles. In the face of serious work-family conflicts, they tend to increase their investment in family and reduce their investment in work because of the realistic trade-off between the demand for family roles and the poor availability of work resources (Bakker and Xanthopoulou, 2013). Women are commonly associated with the role of caring for children, and are less committed to their careers because of their parenting responsibilities (Bezuidenhout and Cilliers, 2010). Accordingly, the following assumptions are proposed:

Hypothesis 2: Work-family conflict negatively affects work engagement

Connection between work-family conflict and perceived organizational support

Based on previous studies, it can be concluded that perceived organizational support is negatively correlated

with work-family conflict, that is, the more perceived organizational support an individual feels, the less work-family conflict he faces. Goff et al. (1990) proposed that the more employees are understood and concerned by the organization, the less work-family conflicts they encounter. Friedman and Podolny (1992) proposed that the more support staff get from the organization, the less time and energy they spend at home, and the less pressure they have at work. Ray and Miller (1994) proposed that in the organizational culture, there is a significant correlation between the recognition of employees' family primacy and work-family conflict. Some measures adopted by the organization that have a positive influence on the family can better alleviate the conflict between work and family of employees. Zheng and Wu (2018) found that each dimension of perceived organizational support is negatively correlated with work-family conflict. Accordingly, the study proposed assumptions as followed:

Hypothesis 3: Work-family conflict negatively affects perceived organizational support

Connection between perceived organizational support and emotional exhaustion

The most direct external manifestation of emotional exhaustion is the feeling of lack of energy and interest in something, which leads to depression and irritability, and then reduces the effort and involvement in work (Chang, 2009). The psychological state of employees' emotional exhaustion is a gradual process. Only when they are in a high-pressure environment for a long time and unable to cope with it, can employees feel the exhaustion of psychological and emotional resources. The JD-R model

shows that the lack of resources weakens the ability of employees to meet job demands, which further leads to withdrawal behavior and job burnout (Bakker and Demerouti, 2017). Organizational support, as a work resource, increases the willingness of employees to put their efforts and abilities into their work, and reduces the threat of employees coping with stressful processes (Crawford et al., 2010). Allen et al. (2012) concluded that high perceived organizational support can greatly improve employees' gratitude behavior, increase employees' emotional investment in the organization, and alleviate emotional exhaustion. Accordingly, the following assumptions are proposed:

Hypothesis 4: Perceived organizational support negatively affects emotional exhaustion

Connection between perceived organizational support and work engagement

Perceived organizational support is the acknowledgement and admiration of staff from the key departments of the organization, which indicates a level that the organization hopes staff to achieve (Loi et al., 2014). Therefore, with the growth of staff's perceived organizational support, staff will realize more cognitive, emotional and work resources given by the organization, thus generating more intention to work (Côté et al., 2021). The social exchange theory holds that if employees think that the policies of the organization are biased towards themselves and get a sense of belonging from the organization, they will work harder and make more beneficial actions for the organization, which is conducive to the long-term development of the company (Bakker et al., 2014). Previous studies have shown that, as a work resource, perceived organizational support has a good predictive effect on employee work engagement, and it is an important antecedent variable. This predictive result not only shows that perceived organizational support significantly directly affects the level of employee work engagement, but also shows an indirect relationship (Attridge, 2009). Accordingly, the following assumptions are proposed:

H5: Perceived organizational support has a positive influence on work engagement.

Relationship between emotional exhaustion and work engagement

Previous research have shown that the three dimensions of job engagement, vitality, dedication and focus, all require individuals to maintain a good energy in the work, and in the case of energy, individual resources can meet the conditions of work engagement (Attridge, 2009).

However, the occurrence of emotional exhaustion leads to the exhaustion of employees, so that individuals do not have more energy to work (Bezuidenhout and Cilliers, 2010). In the basis of the view of job demand-resource model, the higher the degree of work engagement is, the higher the job demand is, which means that in order to maintain better job performance, employees need to improve their psychological, physical, family, organizational and social needs. In this process, individuals often need to sacrifice their other resources, such as time and energy, in order to maintain better job performance. High-intensity efforts may further affect the physical and psychological aspects of individuals, which will affect the work engagement of employees (Bakker and Demerouti, 2017). Emotional exhaustion is the process of energy consumption, which means that employees' energy is gradually exhausted. The individual's time and energy are limited, sustained emotional exhaustion is based on the premise of high-intensity energy consumption, and this consumption will always be exhausted, resulting in employees do not have more energy to work, that is to say, the higher the degree of emotional exhaustion, the lower the level of work engagement (Nair et al., 2020). Accordingly, the following assumptions are proposed:

H6: Emotional exhaustion negatively affects work engagement.

METHOD

Participants

The research adopted a convenient sampling way to conduct an online questionnaire investigation among Chinese female university teachers. A total of 550 questionnaires were collected, and 518 valid questionnaires were retained, with an effective rate of 94.18%, excluding invalid questionnaires with too short answer time and obviously unreasonable answers. Among them, there were 136 people under 30 years old, accounting for 26.25%, 284 people aged 30 to 40, accounting for 54.83%, 79 people aged 41 to 50, accounting for 15.25%, and 19 people over 50, accounting for 3.67%; Fertility: 82 (15.83%) have not yet given birth, 311 (60.04%) have one child, 123 (23.75%) have two children, and 1 (0.19%) has three children; 131 (25.29%) hold bachelor's degree, 295 (56.95%) hold master's degree, and 90 (17.37%) hold doctor's degree; There are 63 respondents with ungraded professional titles, accounting for 12.16%, 192 respondents with junior professional titles, accounting for 37.07%, 158 respondents with intermediate professional titles and accounting for 30.50%, 105 respondents with senior professional titles and accounting for 20.27%; 117 persons (22.59%) have worked for less than 5 years, 246 persons (47.49%) have worked for 5 to 10 years, 119 persons (22.97%) for 11 to 20 years and 36 persons (6.95%) for more than 20 years.

Tools

Work-family conflict scale

Netemeyer et al. (1996) developed the Work-Family Conflict Scale

(WFCS) to assess the extent of work-family conflict among Chinese university female teachers in China (Wang et al., 2011). The scale consists of 10 items, with two dimensions of work-family conflict and family-work conflict, and it uses a Likert scale of 5 ranging from "1" for "strongly disagree" to "5" for "strongly agree". The higher the score, the higher the work-family conflict (Yang et al., 2021). The Cronbach's alpha coefficient of the scale in this study was 0.928.

Work engagement scale

The simple Work Engagement Scale developed by Schaufeli and Bakker was used to test the working status of female university teachers. The scale consists of nine items, covering three aspects of vitality, dedication and concentration, and is scored on a Likert scale from 1 to 5, where 1 represents never, 2 represents occasionally, 3 represents often, 4 represents frequently, and 5 represents every day. The higher the score, the higher the level of work engagement of female university teachers. The Cronbach's alpha coefficient of the scale in this research was 0.922.

Emotional exhaustion scale

The Maslach Burnout Inventory (MBI) scale was developed by Maslach and Jackson (1981) to assess the emotional exhaustion of female university teachers. The scale consists of five items that use a Likert 5-point scale ranging from "1" for "strongly disagree" to "5" for "strongly agree", with higher scores indicating higher levels of emotional exhaustion. In a recent study, the Cronbach's alpha coefficient for this scale was found to be 0.918 (Moussa et al., 2023).

Perceived organizational support scale

The Perceived Organizational Support Scale (POSS) was developed by Settoon et al. (1996) to assess the perceived organizational support of female university teachers in China. The scale contains seven items, scored on a five-point Likert scale ranging from "1" for "strongly disagree" to "5" for "strongly agree", with higher scores indicating stronger organizational support. In this research, the Cronbach's alpha coefficient of the scale was 0.939.

Control variables

Research have shown that demographic variables like age, education level, income, job title, number of children in the family and so on have an impact on individual work-family conflict (Kwon and Kim, 2020). In the basis of it, for the sake of ensuring the validity of the study, this study selects age, education level, job level, the number of children in the family, working years and so on as the control variables of this study.

Statistical processing

SPSS 25.0, PROCESS and Amos statistical software were adopted to input and analyze the statistics, and Pearson correlation analysis, Harman single factor test, mediating effect analysis and other statistical methods were used.

RESULTS AND DISCUSSION

Common method bias test

In terms of statistical tests, the researchers first employed

Harman's single-factor test method to conduct exploratory factor analysis on the main items involved in the study with SPSS 25 software. The results of the dimensionality reduction showed that the variance explanation rate of the first unrotated factor was 43.798%, which is lower than the critical value of 50.00%, indicating that there was no significant common method bias in the research data.

Reliability and validity of the scale

The factor loading coefficients of the measurements in the study were all greater than 0.6. Therefore, the measurement index variables of each dimension can effectively prove the potential characteristics of its corresponding dimension. The Cronbach's α coefficient of each dimension is greater than 0.7, which means that the sample data has good reliability.

The composite reliability (CR) of each dimension was greater than 0.7, indicating that the measurement items of each latent variable had internal consistency. The average variance extracted (AVE) value of each dimension was greater than 0.5, implying that each dimension of the measurement model had good convergent validity (Table 1).

Discriminant validity test

Discriminant validity means that there is a low correlation or significant difference between the latent trait represented by a latent variable and the traits represented by other latent variables. For work-family conflict, the square root of AVE is 0.751, which is greater than the maximum absolute value of the correlation coefficient between factors 0.707, which means that it has good discriminant validity. For emotional exhaustion, the square root of AVE was 0.833, which was greater than the maximum absolute value of the correlation coefficient between factors (0.707), indicating that it had good discriminant validity. For perceived organizational support, the square root of AVE was 0.813, which was less than the maximum absolute value of the inter-factor correlation coefficient 0.873, indicating that the discriminant validity was not good. For work engagement, the square root of AVE was 0.756, which was less than the maximum absolute value of the inter-factor correlation coefficient 0.873, indicating that the discriminant validity was not good. Consequently, the measurement model has good discriminant validity (Table 2).

Hypothesis testing

Direct effect test

According to the results in Table 3 and Figure 2,

Table 1. Reliability and convergence validity examination.

Factor	Indicator	Coef.	Std. error	z	p	Std. estimate	Cronbach's α	CR	AVE
WFC	WFC1	1	-	-	-	0.820	0.928	0.928	0.564
	WFC10	0.965	0.049	19.580	0	0.754			
	WFC2	1.035	0.049	20.915	0	0.790			
	WFC3	0.993	0.048	20.752	0	0.786			
	WFC4	1.015	0.046	21.867	0	0.814			
	WFC5	0.704	0.044	15.907	0	0.644			
	WFC6	0.912	0.046	19.774	0	0.759			
	WFC7	0.878	0.049	18.052	0	0.710			
	WFC8	0.868	0.051	17.131	0	0.682			
WFC9	0.958	0.051	18.866	0	0.734				
EE	EE1	1	-	-	-	0.880	0.918	0.919	0.693
	EE2	0.956	0.041	23.485	0	0.804			
	EE3	1.005	0.041	24.795	0	0.828			
	EE4	0.941	0.041	23.164	0	0.797			
	EE5	0.987	0.038	26.013	0	0.850			
POS	POS1	1	-	-	-	0.808	0.939	0.939	0.662
	POS2	1.220	0.055	22.173	0	0.825			
	POS3	1.173	0.052	22.671	0	0.838			
	POS4	1.188	0.048	24.591	0	0.884			
	POS5	0.940	0.050	18.859	0	0.734			
	POS6	1.265	0.051	24.680	0	0.886			
	POS7	1.198	0.051	23.705	0	0.863			
	POS8	0.746	0.047	15.729	0	0.637			
WE	WE1	1	-	-	-	0.778	0.922	0.923	0.571
	WE2	0.967	0.056	17.417	0	0.716			
	WE3	1.072	0.057	18.681	0	0.758			
	WE4	1.060	0.053	19.969	0	0.799			
	WE5	1.136	0.059	19.207	0	0.775			
	WE6	1.069	0.063	16.957	0	0.700			
	WE7	1.046	0.056	18.657	0	0.757			
	WE8	1.045	0.054	19.507	0	0.785			
	WE9	0.962	0.054	17.758	0	0.727			

Source: Author.

assuming that the standardized path coefficients of H1, H2, H3, H4 and H5 are 0.686, -0.162, -0.347, -0.248 and 0.886 separately, the P values are all less than 0.05, and the hypothesis is established. Only the influence of emotional exhaustion on work engagement ($\beta = 0.009$, $P > 0.05$) did not reach the prominent level, and the hypothesis H6 was not valid.

Mediating effect test

For this research, hierarchical regression method is adopted to measure the main influence and mediating

effect of hypotheses 1 to 6 respectively. First, we test the negative influence of work-family conflict on work engagement of female university teachers; Second, we test the positive influence of work-family conflict on emotional exhaustion of female university teachers, and the negative influence of work and family conflict on perceived organizational support of female college teachers, and the positive influence of perceived organizational support on emotional exhaustion of female college teachers; Finally, work-family conflict, emotional exhaustion and perceived organizational support were put into the regression equation at the same time to verify that the effect of work-family conflict on work engagement

Table 2. Mean, standard deviation and correlation coefficient of each variable.

	Mean	Std. E.	AGE	BIRTH	EDU	TITLE	LS	WE	POS	EE	WFC
AGE	1.963	0.749	1								
BIRTH	2.089	0.643	0.336**	1							
EDU	1.929	0.662	0.295**	0.042	1						
TITLE	2.589	0.945	0.572**	0.289**	0.364**	1					
LS	2.143	0.845	0.753**	0.386**	0.139**	0.556**	1				
WE	3.686	0.793	-0.151**	-0.177**	-0.130**	-0.197**	-0.165**	0.756			
POS	3.423	0.912	-0.197**	-0.137**	-0.166**	-0.202**	-0.215**	0.873**	0.813		
EE	2.911	1.083	-0.014	0.107*	0.113**	0.077	0.001	-0.500**	-0.457**	0.833	
WFC	2.938	0.953	-0.005	0.188**	0.133**	0.107*	-0.009	-0.431**	-0.330**	0.707**	0.751

Source: Author.

Table 3. The test results of path relationship.

Hypothesis	Path	Unstd.	S.E.	Z	P	Std.
H1	WFC→EE	0.741	0.045	16.313	***	0.686
H2	WFC→WE	-0.129	0.031	-4.195	***	-0.162
H3	WFC→POS	-0.350	0.047	-7.462	***	<u>-0.347</u>
H4	POS→EE	-0.266	0.037	-7.179	***	-0.248
H5	POS→WE	0.701	0.039	18.204	***	0.886
H6	EE→WE	0.006	0.030	0.210	0.834	0.009

Source: Author.

of female university teachers disappeared or weakened. The outcomes of the measurement are shown in Table 4 and Table 5.

After controlling age, child-rearing situation, education, working years and professional title, model 1 shows that work-family conflict of university female teachers can significantly and negatively predict their perceived organizational support ($\beta = -0.307$, $p < 0.01$), and hypothesis H3 is verified again; Model 2 showed that work-family conflict was a significant positive predictor of emotional exhaustion ($\beta = 0.711$, $p < 0.01$), and perceived organizational support was a significant negative predictor of emotional exhaustion ($\beta = -0.314$, $p < 0.01$). Hypotheses H1 and H4 were verified again; Model 3 showed that work-family conflict of university female teachers had a significant negative predictive effect on work engagement ($\beta = -0.345$, $p < 0.01$), and hypothesis H2 was verified again; Model 4 showed that the perceived organizational support of female university teachers had a significant positive predictive effect on work engagement ($\beta = -0.711$, $p < 0.01$), and emotional exhaustion had no significant predictive effect on work engagement ($\beta = -0.021$, n. s.). Hypothesis H5 was verified again, and hypothesis H6 was not verified.

In an effort to measure the mediating effect more accurately, the Bootstrap method recommended by

Hayes was used to judge the importance of indirect effect. Combined with the structural equation model method, the indirect effect was more scientifically shown by repeated sampling and confidence interval. Bootstrap sampling test was used to study the mediating effect, and the number of samples was 1000. The outcomes in Table 6 showed that the 95% interval did not include the number 0 (95% CI: -0.333, -0.188) for the mediating path of "WFC→POS→WE", which indicated the existence of this mediating path. For the mediating path of "WFC→EE→WE", the 95% interval includes the number 0 (95% CI: -0.061, 0.021), indicating that this mediating effect path does not exist. Then the chain mediation effect path was analyzed. For the mediation path of "WFC→POS→EE→WE", the 95% interval included the number 0 (95% CI: -0.009, 0.003), which indicated that this mediation effect path did not exist.

Research conclusion

This study introduced JD-R model into the study of work-family conflict, and explored the connection and mechanism between work-family conflict, emotional exhaustion, perceived organizational support and work engagement.

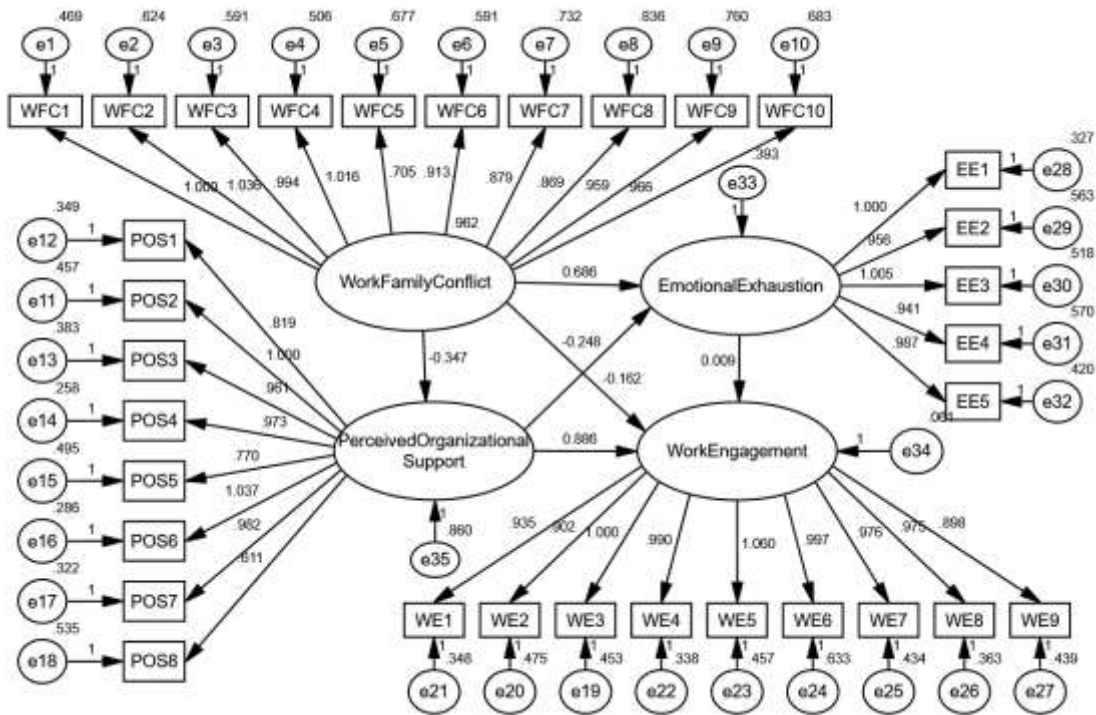


Figure 2. Author Model path diagram and normalized estimates. Source: Author.

First, the study confirmed the negative impact of work-family conflict on work engagement. According to the JD-R model, job demand is a negative factor that consumes personal work energy, and job overburden, role conflict and time stress in work-family conflict will consume individual energy (Bakker et al., 2014; Lyu and Fan, 2020). At the same time, China advocates "collectivism" and "harmony" in Confucianism, believing that work is for a good family life, and the traditional concept that women should be more "husband and children". So when there is less conflict between work and family, women will put more resources into the family (Kwon and Kim, 2020). Faced with the role conflict between family and work, female university teachers actively or unconsciously devote most of their energy to the family, and the change of family structure leads to the need for children to bear the life care of the previous and next generations, resulting in increased family pressure, thus neglecting the role of work and having no time and energy to devote to teaching. Role conflict will inevitably lead to a decline in work engagement (Filho et al., 2021).

This research also found that the perceived organizational support of female university teachers plays a partial mediating role between work-family conflict and work engagement: that is, the work-family conflict of female university teachers can indirectly affect work engagement through the perceived organizational support. According to the JD-R model, perceived organizational support is a job resource, which can

stimulate employees' work motivation, improve work engagement, and then have a positive impact (Bakker et al., 2014). Perceived organizational support, as a positive variable, weakens the negative impact of work-family conflict on female university teachers to a certain extent. Foreign scholars have found that perceived organizational support can inhibit the negative impact of adverse factors on female university teachers after combing many literatures and studies (Dai et al., 2021). When female university teachers have a higher level of organizational support, they will devote themselves to their work.

Work-family conflict will bring stress, tension, burnout and other adverse psychological and physical symptoms to employees. Similarly, according to the attrition path hypothesis of the JD-R model, excessive job demands (such as work-family conflict in this study) can also trigger the energy exhaustion of female university teachers, which in turn has a negative impact on female teachers and universities (Bakker and Demerouti, 2017). However, in this study, the mediating role of emotional exhaustion between work-family conflict and work engagement of female university teachers is not significant.

Management inspiration

This research shows certain guiding importance for the practice of university management. Administrators should

Table 4. Regression analysis results of main effect, mediating effect.

	POS (Model 1)	EE (Model 2)	WE (Model 3)	WE (Model 4)
Constant	5.046** -26.972	2.143** -8.528	5.241** -33.341	1.667** -12.217
AGE	-0.042 (-0.519)	-0.078 (-1.124)	-0.02 (-0.303)	0.008 -0.222
BIRTH	0.017 -0.273	-0.048 (-0.862)	-0.041 (-0.771)	-0.055 (-1.959)
EUDCATION	-0.11 (-1.774)	0.011 -0.197	-0.036 (-0.685)	0.043 -1.592
TITLE	-0.027 (-0.528)	-0.013 (-0.282)	-0.054 (-1.257)	-0.035 (-1.558)
LS	-0.184** (-2.600)	0.008 -0.134	-0.095 (-1.596)	0.037 -1.192
WFC	-0.307** (-7.645)	0.711** -19.444	-0.345** (-10.242)	-0.110** (-4.508)
POS		-0.314** (-8.227)		0.711** -34.437
EE				-0.021 (-0.931)
Sample	518	518	518	518
R ²	0.166	0.561	0.221	0.789
Adjust R ²	0.157	0.555	0.212	0.786
F value	F (6,511)=17.008 p=0.000	F (7,510)=92.992 p=0.000	F (6,511)=24.192 p=0.000	F (8,509)=237.829 p=0.000

* $p < 0.05$ ** $p < 0.01$ T value in brackets.
Source Author.

Table 5. Effect analysis.

Effect	Path	Effect	SE	t	p	LLCI	ULCI
Direct effect	WFC→WE	-0.110	0.024	-4.508	0.000	-0.158	-0.062
	WFC→POS	-0.307	0.040	-7.645	0.000	-0.385	-0.228
Indirect effect	WFC→EE	0.711	0.037	19.444	0.000	0.639	0.782
	POS→EE	-0.314	0.038	-8.227	0.000	-0.389	-0.239
	POS→WE	0.711	0.021	34.437	0.000	0.670	0.751
	EE→WE	-0.021	0.022	-0.931	0.352	-0.065	0.023
Total effect	WFC→WE	-0.345	0.034	-10.242	0.000	-0.411	-0.279

Source: Author.

focus on the coordination between work and family of university women teachers. When university women teachers spend too much time to complete their work, their work performance and project performance will be improved in a short time, but their long-term consumption of internal and emotional resources will lead to emotional exhaustion of female university teachers, which may reduce their work performance and affect their work engagement (Lyu and Fan, 2020). In order to reduce the

interference and trouble of work-family conflict on female university teachers and improve their work engagement, on the one hand, universities should actively focus on the career growth of female university teachers and the work-family conflict behind it, provide organizational support resources from various aspects, implement family-friendly policies, improve incentive mechanisms, and help them effectively balance the relationship between family and work (Dai et al., 2021). When employees feel strong

Table 6. Mediation effect analysis.

Item	Effect	Boot SE	BootLLCI	BootULCI	z	p
WFC→POS→WE	-0.218	0.037	-0.333	-0.188	-5.828	0
WFC→EE→WE	-0.015	0.021	-0.061	0.021	-0.709	0.478
WFC→POS→EE→WE	-0.002	0.003	-0.009	0.003	-0.682	0.495

Source: Author.

work-family conflict, they should take appropriate intervention strategies, such as providing leave, flexible work arrangements, workplace social support, psychological counseling, work-family conflict coping strategy training, to help employees reduce work-family conflict, reduce job burnout and improve work engagement (Zeng and Xu, 2020). On the other hand, female university teachers themselves should actively deal with the negative impact of work-family conflict on themselves. We should rationally plan our career, actively seek help, alleviate work-family conflicts, better adapt to the workplace, improve work input, and help our career growth (Watts and Robertson, 2011).

Research limitations and future research

First of all, although there is no serious common method bias in this research through Harman's one-way test, the data obtained in this study are only obtained by female university teachers themselves filling in questionnaires, and the cross-sectional data at a certain time point are selected, so it may still be affected by common method bias. In future research, we can collect questionnaires from different evaluation subjects such as superiors, colleagues and subordinates or at two different time points to relieve the impact of common method bias from the procedure. Secondly, in order to focus on the existing problems, this study uses demographic variables, like age, education, professional title, fertility and years of working as control variables, and only focuses on the two mediating variables of emotional exhaustion and perceived organizational support. However, the empirical research on the connection between individual differences, psychological characteristics and work engagement, as well as the position of different types of resources in the JD-R model is of great value, and follow-up studies should be more in-depth discussion and analysis on these issues.

CONFLICT OF INTERESTS

The authors have not declared any conflicts of interests.

REFERENCES

Allen TD, Johnson RC, Saboe KN, Cho E, Dumani S, Evans S (2012).

- Dispositional variables and work-family conflict: A meta-analysis. *Journal of Vocational Behavior* 80(1):17-26.
- Attridge M (2009). Measuring and managing employee work engagement: A review of the research and business literature. *Journal of Workplace Behavioral Health* 24(4):383-398.
- Bakker AB, Demerouti E (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology* 22(3):273.
- Bakker AB, Demerouti E, Sanz-Vergel AI (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior* 1(1):389-411.
- Bakker AB, Xanthopoulou D (2013). Creativity and charisma among female leaders: The role of resources and work engagement. *The International Journal of Human Resource Management* 24(14):2760-2779.
- Bezuidenhout A, Cilliers FV (2010). Burnout, work engagement and sense of coherence in female academics in higher-education institutions in South Africa. *SA Journal of Industrial Psychology* 36(1):1-10.
- Bowen P, Zhang RP (2020). Cross-boundary contact, work-family conflict, antecedents, and consequences: Testing an integrated model for construction professionals. *Journal of Construction Engineering and Management* 146(3):04020005.
- Chang M-L (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review* 21(193-218).
- Côté K, Lauzier M, Stinglhamber F (2021). The relationship between presenteeism and job satisfaction: A mediated moderation model using work engagement and perceived organizational support. *European Management Journal* 39(2):270-278.
- Crawford ER, LePine JA, Rich BL (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology* 95(5):834.
- Dai HM, Ju B, Teo T, Rappa NA (2021). Understanding Chinese female university teachers' intention to pursue a PhD degree: Some insights from a Chinese university. *Higher Education* 81(1347-1366).
- Fox MF, Fonseca C, Bao J (2011). Work and family conflict in academic science: Patterns and predictors among women and men in research universities. *Social Studies of Science* 41(5):715-735.
- Friedman RA, Podolny J (1992). Differentiation of boundary spanning roles: Labor negotiations and implications for role conflict. *Administrative Science Quarterly*, pp. 28-47.
- Frone MR, Russell M, Cooper ML (1992). Antecedents and outcomes of work-family conflict: testing a model of the work-family interface. *Journal of Applied Psychology* 77(1):65.
- Gao F (2021). The Effects of Person-Organization Fit on Job Satisfaction among College Teachers. *Education Research Monthly* 11):7.
- Goff SJ, Mount MK, Jamison RL (1990). Employer supported child care, work/family conflict, and absenteeism: A field study. *Personnel Psychology* 43(4):793-809.
- Greenhaus JH, Beutell NJ (1985). Sources of conflict between work and family roles. *Academy of Management Review* 10(1):76-88.
- Kwon K, Kim T (2020). An integrative literature review of employee engagement and innovative behavior: Revisiting the JD-R model. *Human Resource Management Review* 30(2):100704.
- Filho LW, Levesque VR, Salvia AL, Paço A, Fritzen B, Frankenberger F, Damke LI, Brandli LL, Ávila LV, Mifsud M (2021). University teaching

- staff and sustainable development: an assessment of competences. *Sustainability Science* 16(1):101-116.
- Lin Z, Ju L, Chen L (2013). Work-Family Conflict Research and Chinese Issues: Perspective, Content and Design. *Journal of Management World* 9:18.
- Loi R, Ao OK, Xu AJ (2014). Perceived organizational support and coworker support as antecedents of foreign workers' voice and psychological stress. *International Journal of Hospitality Management* 36(23-30).
- Lyu X, Fan Y (2020). Research on the relationship of work family conflict, work engagement and job crafting: A gender perspective. *Current Psychology*, pp. 1-11.
- Maslach C, Jackson SE (1981). The measurement of experienced burnout. *Journal of Organizational Behavior* 2(2):99-113.
- Maslach C, Schaufeli WB, Leiter MP (2001). Job burnout. *Annual Review of Psychology* 52(1):397-422.
- Nair AV, McGregor A, Caputi P (2020). The impact of challenge and hindrance demands on burnout, work engagement, and presenteeism. A cross-sectional study using the job demands-resources model. *Journal of Occupational and Environmental Medicine* 62(8):e392-e397.
- Netemeyer RG, Boles JS, McMurrian R (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology* 81(4):400.
- Okpara JO, Squillace M, Erundu EA (2005). Gender differences and job satisfaction: a study of university teachers in the United States. *Women in Management Review* <https://doi.org/10.1108/09649420510591852>
- Ray EB, Miller KI (1994). Social support, home/work stress, and burnout: Who can help? *The Journal of Applied Behavioral Science* 30(3):357-373.
- Schaufeli WB, Bakker AB, Salanova M (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement* 66(4):701-716.
- Settoon RP, Bennett N, Liden RC (1996). Social exchange in organizations: Perceived organizational support, leader-member exchange, and employee reciprocity. *Journal of Applied Psychology* 81(3):219.
- Watts J, Robertson N (2011). Burnout in university teaching staff: A systematic literature review. *Educational Research* 39(1):33-50.
- Yang Y, Li T, He L (2021). The Relationship among Chinese adolescents' parental involvement, core self-evaluation and school adaptation. *International Journal of Mental Health Promotion* 23(4):521-531.
- Zeng J, Xu G (2020). Ethical leadership and young university teachers' work engagement: a moderated mediation model. *International Journal of Environmental Research and Public Health* 17(1):21.
- Zheng J, Wu G (2018). Work-family conflict, perceived organizational support and professional commitment: A mediation mechanism for Chinese project professionals. *International Journal of Environmental Research and Public Health* 15(2):344.

Full Length Research Paper

Development of 21st century skills during preschool period: A phenomenological study in Türkiye

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The aim of this qualitative study is to investigate experiences of master's students regarding children's development of 21st century skills during preschool period in Türkiye. This is a phenomenological study. Purposeful sampling technique was applied in the forms of convenience sampling and criterion sampling. The data for this study was collected from four preschool teachers who were also master's students attending the Department of Preschool Education at a university in İzmir, Türkiye during spring 2021-2022. The data were collected through a Demographic Information Form and an Interview Form. Face-to-face interviews were conducted with the participants using a semi-structured interview form, and the data were analysed through content analysis technique. Based on the participants' experiences regarding the development of 21st century skills of preschool children, all participants' stated creative thinking techniques as a 21st century skill, and all stated technology based activities as a way of developing children's 21st century skills. All of them also expressed digital literacy skills of teachers as a teacher quality which develops students' 21st century skills and expressed family control over children's usage of technology as a responsibility of families. They all acknowledged that schools' technological infrastructure and conditions are often inadequate for teaching children 21st century skills, and suggested the preparation of an activity guide which teaches 21st century skills to children as a solution. The findings indicate that the participants have some knowledge regarding the development of 21st century skills in children and have designed activities based on this knowledge to help children acquire these skills during their preschool period. However, they faced certain difficulties while designing and implementing these activities. They also all emphasized their experiences regarding children's acquisition of technological skills. This study aims to reveal the professional experiences of preschool teachers regarding the development of children's 21st century skills, explain the present situation and activities that teachers design, display difficulties encountered during teaching, and explain the needs of preschool teachers.

Key words: preschool period, 21st century skills, master's students attending preschool education program, experiences.

INTRODUCTION

Changes in several aspects of life have created a need for individuals' acquisition of 21st century skills. Education for 21st century skills aims to equip students with the necessary knowledge and skills in case they

encounter unexpected situations in their daily lives as well as in their professional lives (Altınpulluk and Yıldırım, 2021; Larson and Miller, 2011; Scott, 2015). The new millennium requires individuals to adapt and employ

several skills called 21st century skills, and those skills are cooperation, critical thinking, communication, creativity, technology literacy, cultural skills and problem-solving skills (Allen and Van der Velden, 2012). In this respect, it is important to integrate 21st century skills into education and to present activities to learners for them to internalise. The expectation for education to include 21st century skills affects the organization of educational policies, educational environment and curriculum design including that of preschool education (Altınpulluk and Yıldırım, 2021; Anagün et al., 2016; Eryılmaz and Uluyol, 2015; Güngör, 2021; P21, 2019b; Topçu and Çifçi, 2018; Turiman et al., 2012; Voogt and Roblin, 2012). As a requirement of becoming a developed community, it is important that students acquire 21st century skills. Also it is important to present a variety of activities in 21st century skills programs to students from all ages and grade levels both at the national and international levels (Partnership for 21st Century Skills (P21) 2019; Tuğluk and Özkan, 2019).

National Research Council (2011) categorizes 21st century skills under cognitive skills, interpersonal skills and personal skills categories. Partnership for 21st Century Skills (P21) (2019) categorized them as a) learning and innovation skills, b) information media and technology skills, c) life and career skills. In addition, Kennedy and Odell (2014) view 21st century skills as life and career skills and explain them as global awareness, information and media literacy, leadership, responsibility, communication, productivity, technology literacy, creativity problem solving, and critical thinking skills. As far as literature regarding the categories of 21st century skills is concerned, it is clear that similar characteristics are stated in general, and it is aimed to equip individuals with the adaptation skills to meet the needs of the century. Also, Turkish Ministry of National Education Quality Framework shares common ground with Framework for 21st Century Project in the USA in terms of basic 21st century skills like learning and innovation skills, information, media and technology skills and life and career skills (Gelen, 2017).

It is emphasized that 21st century skills (critical thinking, collaboration, communication, creativity, technology literacy, and social-emotional skills) that preschool children learn are very critical for both their education and for their lives in general (P21, 2019a; P21, 2019b). Important 21st century skills which preschool children are intended to be equipped with by Partnership for 21st Century Skills can be classified as follows; a) learning and innovation skills (creativity and innovation, critical thinking, problem solving, communication, collaboration) b) life and career skills (entrepreneurial

skills and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility) c) information- technology and media skills (information literacy and media literacy) (2019b). Similarly, Yalçın et al. (2020) research, conducted in Türkiye regarding 21st century skills that preschool children can acquire, classified them as life and professional skills, learning and innovation skills and information, media and technology skills.

Among 21st century skills, it is predicted to develop individuals' critical thinking, problem solving, communication and collaboration skills that are under creativity and innovation skills during preschool period (Kerdthaworn and Chaichomchuen, 2021; P21, 2019b; UNICEF, 2019). Generally, STEM, cooperative learning, game activities, philosophy activities, creative activities and technology-based activities etc. are employed during preschool period to develop children's creativity and innovation skills (Ata-Aktürk, Demircan, Şenyurt and Çetin, 2017; Cheyne and Rubin 1983; Daniel et al., 2012; Liu et al., 2013; Fessakis et al., 2013; Häkkinen et al., 2017; Karadağ and Demirtaş, 2018; Nam et al., 2010; Siew et al., 2017; Zahra et al., 2013). It is stated that education is an important factor for the development and active implementation of critical thinking, which is viewed as the evaluation of reality, information and claims in terms of their values. Therefore, education for critical thinking skills should be offered during early ages for individuals to employ them for the rest of their lives. Especially philosophical activities during preschool period support the development of this skill (Daniel and Auriac, 2011; Karadağ and Demirtaş, 2018; Lewis and Smith, 1993; Şenşekerçi and Bilgin, 2008). It is required for learners to conjoin their expertise and opinions while cooperating to solve problems and to create new information during cooperative learning, which is important for being successful in the information society of the 21st century. In this context, cooperative learning requires the employment of social skills and skills for working in coordination with other learners both during formal education activities and daily learning activities (Barfield, 2016; Häkkinen et al., 2017). It is emphasized that 21st century skills like critical thinking and problem solving can be developed, and qualified individuals can be raised through STEM education during early childhood (Akçay-Malçok and Ceylan, 2022; Bertrand, 2019; Erol et al., 2022; Simoncini and Lasen, 2018; TÜSİAD, 2017). In addition, P21 states (2019b) children can develop their 21st century skills through several creative activities like art, writing, drawing, sculpture, drama, creative activities and social games, dance, movement and scientific discoveries.

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Life and career skills under 21st century skills that preschool children are wanted to acquire are classified as flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability and leadership and responsibility. Examples of life and career skills in class atmosphere can be given as follows; a) flexibility and adaptability; fulfilling class responsibilities, easy adaptation to different tasks given in a day, asking questions to learn more and giving answers to questions b) initiative and self-direction; going through every step one by one in order to complete a task or an activity, accepting others' creative propositions and applying them, planning an imaginary game c) social and cross-cultural skills; being sensitive to others' needs, sharing materials, giving negative answers in a suitable manner d) productivity and accountability; explaining steps in order to play a game or to share an activity, seeking for more challenging activities, trying new experiences in an independent and secure manner, e) leadership and responsibility; participating in group discussions, using strategies in order to get assistance from adults and peers, starting new games with other children (Cahill, 2017; Elçi, 2021; Estes, 2016; P21, 2019b; Trilling and Fadel, 2009, as cited in Dinler et al., 2021:283).

Skills such as information technology and media skills - 21st century skills- have gained importance because of recent technological developments. Rapid changes in technology increased the number of technological devices used in preschool education and facilitated access to information. Today technological devices and interactive technologies such as televisions, projectors, computers, smart boards, smart phones, tablet computers, barcode readers as well as games that simulate real life, digital cameras, DVD and music players, recorders, electronic toys, e-book readers and digital content from Internet can be used for preschool education (Epstein, 2015; Güngör, 2021; Kardeş, 2020; Orçan et al., 2017; Plowman and Stephen, 2013; NAEYC, 2012). It is important how information is structured in the learning outcomes of information technology, media skills (information and media literacy), 21st century skills that preschool children are wanted to acquire. It should be emphasized here that individuals should employ several thinking skills in order to find information, attribute meaning to the information, find relationships, use, transform and reproduce it while they employ technological skills at the same time (Anagün et al., 2016; Güngör, 2021; Harari, 2020; P21, 2019b).

Therefore, the objective is both to provide enough technological hardware as well as to trigger their mental skills by combining this hardware with effective educational processes for them to produce quality information. In this respect, Turkish National Ministry of Education's Movement to Increase Opportunities and Technology (FATİH) Project provides smart boards, Internet access, e-content and tablets to students and

teachers including preschool level. In service trainings were planned for teachers to use these technologies effectively. In this way, information technology skills and media skills were tried to be supported through FATİH Project (Eryılmaz and Uluyol, 2015).

A longitudinal study conducted by Sylva et al. (2020) regarding development of 21st century skills during preschool period determined that process quality supports the development of self regulation and prosocial behavior -21st century skills- which support the success of individuals during school and after school years. In this context, it can be said that preschool education period is a critical era for the acquisition of 21st century skills (Çetin and Çetin, 2021; Şimşek and Tuğluk, 2021). Therefore, children's acquisition of 21st century skills starting from preschool years will facilitate children's adaptation of today's needs, will enable them acquire technological skills and will facilitate their openness to innovation and be successful individuals in the future (Auld and Morris, 2019; Eryılmaz and Uluyol, 2015; Kardeş, 2020).

In this respect, investigation and explanation of which 21st century skills that preschool students can acquire, how students can acquire them and which factors are important during preschool educational process are thought to be important.

One research investigating studies conducted on 21st century skills stated that studies emphasize the importance of conducting research with students from lower grades. In addition, it is stated that students' acquiring 21st century skills would contribute their professional lives and social lives in the future (Düzgüner et al., 2022). Another research, surveying the Web of Social Science Citation Index (SSCI) published during 2010-2019, stated that the number of studies investigating preschool children's 21st century skills is very small (Altınpulluk and Yıldırım, 2021).

This research aims to describe how master's students at Department of Preschool Education perceive children's development of 21st century skills during preschool period, difficulties that can arise during this process and their opinions on how to cope with these difficulties based on their teaching experiences and perception processes. In this respect, it is found important to explain the views of master's students at Department of Preschool Education in a university in Türkiye concerning the development of 21st century skills during preschool period in detail based on their experiences and perceptions with children. It is hoped to clarify children's development of 21st century skills during preschool period which are viewed as important skills today and to contribute to the related literature.

LITERATURE REVIEW

Preschool period is significant for children's acquisition of

21st century skills, and research has been conducted regarding this topic (Altınpulluk and Yıldırım, 2021; Auld and Morris, 2019; Chen and Chang, 2006; Çetin and Çetin, 2021; Danyi, 2002; Düzgüner et al., 2022; Elçi, 2021; Eryılmaz and Uluyol, 2015; Güney-Manavoğlu, 2022; Güngör, 2021; Haugland, 2000; Kardeş, 2020; Kamalodeen et al., 2017; McCarick and Xiaoming, 2007; Sylva et al., 2020; Şimşek and Tuğluk, 2021). It is stated that the number of studies regarding 21st century skills of preschool children and how to develop them is limited in Türkiye (Düzgüner et al., 2022; Elçi, 2021; Güney-Manavoğlu, 2022; Güngör, 2021). Studies in literature cover individual skills such as problem solving, creativity and critical thinking rather than focusing 21st century skills in general during preschool period (Karadağ and Yıldız Demirtaş, 2018; Tavlı, 2007; Yaşar and Aral, 2010; Yuvacı and Dağlıoğlu, 2018).

Sylva et al. (2020) research stated that the sustainability of quality of education during preschool period contributes the development of selfregulation and prosocial behaviors which are among the 21st century skills that affect the future success of individuals. Auld and Morris (2019), defining early childhood education for 21st century education in their research, emphasized the role of children's cognitive skills and children's role as a source for human capital in the future after comparing cognitive test results of 5-year-old children in three different countries. Cloney and Picker (2019) investigated what early childhood education taught in terms of curriculum and early childhood settings in Australia in regard to 21st century skills. They stated early childhood education curriculum and settings are in line with 21st century skills, and the development of social emotional skills are given the most importance. Kamalodeen et al. (2017) intended to develop preschool teachers' ICT competence and confidence in regard to usage of Web 2.0 tools in a STEM professional development initiative and stated that teachers' competence increased in dijitally rich settings. McCarick and Xiaoming (2007) investigated emprical research in literature conducted between 1985-2004 regarding the effects of computer usage on young children's social, cognitive, language development and motivation. Haugland (2000) conducted a research regarding the usage of computers in classes in order to increase learning in the 21st century during preschool education. This study focused on how computers can be used in order to increase young children's learning in educational settings. It can be said that more studies are needed abroad on the development of preschool children's 21st century skills, and Altınpulluk and Yıldırım (2021) points out the gap in the literature in SSCI regarding this topic. Güney-Manavoğlu (2022) wanted to determine, from the perspective of preschool teachers, which 21st century skills preschool teachers wanted their students to acquire and which educational activities they designed to teach them in Türkiye.

It was revealed that teachers mostly organise drama

activities, STEM, mind games, traditional games, modeling, cooperation with families, story books and artistic activities in order for children to acquire these skills.

Elçi (2021) studied the relationship between preschool children's 21st century skills and their competition styles which found out that children of low income families have lower scores of 21st century skills comparing to children of middle or high income families. They also found that 21st century skills and competition scores of children attending preschool for longer than two or more years are higher than that of children who are first year students. In addition, it was found that 21st century skills scores of children whose mothers are working are higher than those whose mothers are not working.

The higher 21st century skills scores of children get the competition scores of children increase, and the higher competition scores of children get their 21st century skills scores increase. Çetin and Çetin (2021) conducted a research on Preschool Education Curriculum and activity book prepared by National Ministry of Education 2013 in terms of 21st century skills, and they concluded that information, media and technology skills did not exist in the preschool curriculum and activity book. However, the curriculum and the book support learning and innovation skills as well as life and career skills among the 21st century skills. Some research was also conducted regarding the development of measuring tools for the measurement of 21st century skills during preschool period. Simsar et al. (2020) conducted a validity and reliability research of "21st Century Skills Scale" for 3-4 year old children. A similar study was conducted by Yalçın et al. (2020) who developed a scale to measure 21st century skills of 5-6 year old children. Reliable and valid 21st century skills scales were developed as a result of both studies. It is observed that studies regarding 21st century skills of especially preschool children in Türkiye is limited. However, there are research results indicating the importance of educational processes for the development of 21st century skills during preschool period. The importance of conducting more research regarding the development of 21st century skills during preschool period came into light as a result of the previous research. Therefore, it is thought that investigation of experiences of preschool teachers, attending a masters' program on preschool education, regarding the development of children's 21st century skills during preschool period in Türkiye is important. Based on teachers' own professional experiences in regard to 21st century skills the results of this research is hoped to contribute the explanation of the present situation and the present teacher activities as well as to reveal difficulties that teachers endure and their needs at schools.

The aim of this research is to investigate the experiences of preschool teachers who are also masters' students in terms of the developments of children's 21st century skills during preschool period in Türkiye. The

problem statement of this research is “What kind of experiences do masters’ students attending preschool education program go through in regard to the development of 21st century skills during preschool period?” The following sub problems are also chosen.

Sub problems

1. What are 21st century skills that they want students to develop during preschool period based on the experiences of masters’ students studying Preschool Education Program?
2. What are the experiences of masters’ students attending Preschool Education Program regarding the process of children’s development of 21st century skills during preschool period?
3. What are the experiences of masters’ students attending Preschool Education Program regarding the difficulties during the process of children’s development of 21st century skills during preschool period?

METHODOLOGY

Research design

The aim of this qualitative research is to investigate the experiences of preschool teachers, who at the same time attend the masters’ program in Department of Preschool Education, in regard to development of preschool children’s 21st century skills in Türkiye. This is a phenomenological research following the qualitative research pattern in which qualitative data collection methods are used which reflect cases and perceptions in their natural settings with a holistic attitude (Yıldırım and Şimşek, 2008). The most important aim of the phenomenological design is to describe cases, situations, perceptions and experiences that people go through (Yıldırım and Şimşek, 2008), and this phenomenological research, based on the participants’ awareness of this phenomena, aims to reveal opinions and experiences of the participants’ regarding the development of 21st century skills of children during preschool period. Therefore, face-to-face interviews were conducted through semi structured interview questions with preschool teachers who are attending Preschool Education master’s program in order to gather detailed information regarding their experiences about this phenomenon.

The subjects were chosen via two methods named convenience sampling and criterion sampling which are among the purposeful sampling techniques. Convenience sampling is employed for practical reasons to generate data in a short time from a convenient group who are available and easy to reach (Patton, 2002; Yıldırım and Şimşek, 2008). The first step was to reach all 12 masters’ students attending the Department of Preschool Education in an university in İzmir during 2021-2022 Spring semester in order to determine the participants. Then, criterion sampling method, one of purposeful sampling methods, aims to include cases which meet the criterion or criteria determined by the researcher to investigate (Patton, 2002; Yıldırım and Şimşek, 2008) was applied. Therefore, the second step was to select 4 masters’ students who comply with the criteria of being a preschool teacher in a state school. The remaining 8 masters’ students out of 12 did not have any work experience as preschool teachers, therefore they were not selected.

Literature was consulted in order to decide how many participants to be selected in this research. Onwuegbuzie and

Leech (2007) state that some researchers emphasize research design determines the number of participants to be selected. Literature regarding phenomenological research indicates 3-4 participants can be employed (Creswell, 2015).

In addition, this research employed the principles of “focus of the research” and “data saturation” while determining the number of participants (Creswell, 2015; Cropley, 2002, as cited in Yıldırım and Şimşek, 2008:114). Since the focus of this research is preschool teachers who have knowledge and understanding regarding what 21st century skills are and how to develop them during preschool period, the participants were selected among masters’ students who passed the entrance exam to be become a master’s student and who have been receiving further education. The sample size was determined as 4 participants due to the design and criteria of the research. This situation can be said as the limitation of the research. The number of participants is also acceptable from the data saturation point of view since the aim is to collect in-dept views of the master’s student participants in this phenomenological design. In addition, data from the in-dept interviews with the participants resulted mostly in the creation of same codes and themes.

Participants

The participants are four female students attending the master’s program at Department of Preschool Education in a university in Türkiye during 2021-2022 Spring Semesters, and all four of them qualify for the criteria to participate. All participants are graduates of Department of Preschool Education. Their GPAs range between 3.30-3.40, and they work as preschool teachers in independent preschools under the supervision of National Ministry of Education or in preschools of elementary schools. Their work experience also ranges between 3 months to 2 years.

Data collection and data analysis

The data were collected through a demographic information form and an interview form. The interview questions were prepared after an extensive literature review. Also two experts reviewed the questions and gave feedback in order to provide validity. The final questions suggested by the experts were included in the semi structured interview form. Face-to-face interviews were conducted by the researcher during 2021-2022 Spring Semester and each interview took approximately 30 minutes. Additional questions were also used during the interview process depending on the need. The interviews were conducted at the researcher’s office at the Faculty of Education. The questions are as follows:

1. What are 21st century skills that students are wanted to acquire during preschool period?
2. What kind of activities would be effective in order to develop 21st century skills of students during preschool period?
3. What could the factors which support the acquisition of students’ 21st century skills during preschool period?
4. What do you think the difficulties could be during students’ acquisition of 21st century skills during preschool period?
5. What are your proposed solutions for difficulties experienced during children’s acquisition of 21st century skills during preschool period?

The answers given by the master’s students attending Department of Preschool Education were written down, and their answers were confirmed in order to avoid any possible loss of data. The data were analyzed via content analysis method. It is aimed to form concepts and connections (relations) which can explain the data during content analysis procedure. The content analysis procedure of this

Table 1. Sub-theme and code regarding 21st century skills during pre school period theme.

Theme	Sub-theme	Code	Participants
21st century skills during preschool period	Learning and innovation skills	Creative thinking skills	S1, S2, S3,S4
		Different thinking skills	S1, S2, S3
	Life and career skills	Social skills	S2, S3, S4
		Information, media, and technology skills	Digital literacy skills

Source: Author

qualitative research included coding the data, determining themes, organizing data under themes, assigning codes to the data, and explanation and interpretation of the findings (Yıldırım and Şimşek, 2008). As a result of the analysis of the data, 4 themes and 10 sub-themes were reached. In the explanations below, information is given about the necessary conditions (Erlandson et al., 1993, as cited in Yıldırım and Şimşek, 2008:262; Miles and Huberman, 1994) to ensure the validity and reliability of the data.

Validity and reliability of the research

The necessary conditions should be met in order to achieve validity and reliability of a qualitative research (Yıldırım and Şimşek, 2008; Miles and Huberman, 1994; Lecompte and Goetz, 1982), and this research also paid attention to achieve this. For the credibility of the research, first of all, while determining the questions in the interview form, the literature was closely examined, and the opinions of two experts were asked, and some changes were made in the questions in line with their suggestions. In addition, pre-interviews were held with two graduate students to decide how well the questions serve the purpose. After these interviews, some changes were made to give the form its final shape. Face-to-face interviews were conducted with the participants. The data obtained at the end of each interview were summarized to the participants. In order to ensure the transferability of the research, meaningful stacks were tried to be obtained through codes and themes with the findings obtained. The research process was explained in detail, the purposeful sampling method was used, examples of direct quotations are included and the details about how validity and reliability of the research were achieved were explained.

The codings conducted by the researcher were repeated after a certain time frame in order to provide trustworthiness. In this respect, the formula offered by Miles and Huberman (1994) was employed in order to provide coding reliability.

The formula was $\text{Consensus/Consensus+Disagreement} \times 100$. The minimum reliability should be expected to be 80% (Miles and Huberman, 1994). The reliability of the codes in this research was found to be 90%. In Furthermore, the status of the participants and the researcher were described, the opinions of the participants were confirmed by them, and the interview and analysis procedures were explained in detail in order to provide confirmability of the research. The codes created depending on the experiences and the participants in these codes were checked.

FINDINGS

The following tables explain the results regarding the opinions of master's students studying at Department of Preschool Education regarding children's development of 21st century skills during preschool period. The letter (S) is used as the abbreviation for student. Table 1 presents

theme regarding 21st century skills during preschool period, sub-themes and codes determined after data analysis.

As seen in Table 1, there are learning and innovation skills, life and career skills, information, media, and technology skills sub-themes and codes under the theme of "21st century skills during preschool period". In Table 1, it is seen that all participants expressed "creative thinking skills" under the learning and innovation skills for the theme of "21st century skills during preschool period". One comment on this was: "*It is important for a preschool child to gain creative thinking skills in order to achieve 21st century skills*" (S1). Another participant (S2) also said "*Supporting the development of creative thinking skills of children as 21st century skills will enable them become more successful in future*" which was placed under the theme. Most of the participants voiced opinions regarding "social skills" under the life and career skills, "digital literacy skills" under the information, media, and technology skills and "different thinking skills" under the learning and innovation skills. Regarding "social skills", two participants said "*Supporting children's development of social skills will facilitate their adjustment to teamwork which is one of 21st century skills*" (S3) and "*It is important to make students acquire social skills which are among 21st century skills during preschool period*" (S4). Regarding "digital literacy", the participants said "*Among 21st century skills, development of computer and technology usage skills of preschool children will be beneficial because they will need to employ these skills both in their educational lives and in their daily lives in future*" (S4). "*It is inevitable that children will learn to use computers in this century*" (S1). Regarding "different thinking skills", one participant stated "*It is important for preschool students to see problems and to be able to create solutions to these problems as 21st century skills*" (S2).

In addition, regarding the importance of preschool children's acquiring "different thinking skills" as 21st century skills during preschool period, the participants stated that these skills are effective on children's points of views on daily events. One participant, (S3), said:

"*Analytical thinking as a 21st century skill facilitates children's seeing daily events in a cause-effect relationship*". (S4), also said "*Children's ability to view*

Table 2. Sub-Theme and code regarding educational applications that develop children's 21st century skills during preschool period theme.

Theme	Sub-theme	Code	Participants
Educational applications that develop children's 21st century skills during preschool period	Activities	Technology based activities	S1, S2.S3,S4
		Project activities	S1, S2, S3
		STEM activities	S1, S2, S3
		Art activities	S1, S3
		Science activities	S1, S3
		Drama activities	S1, S4
		Game activities	S2
		Book reading activities	S4
	Methods and techniques	Creative thinking techniques	S2, S3, S4
		Problem solving techniques	S1, S2, S3
		Question-answer technique based on open ended questions	S2, S4
		Cooperative learning method	S1
		Station technique	S4

Source: Author

daily events from a multidimensional point of view, as a 21st century skill, should be developed during preschool period".

Table 2 presents themes regarding educational activities that develop children's 21st century skills during preschool period, sub-themes and codes determined after data analysis. As seen in Table 2, there are activities, methods and techniques, sub-themes and codes under the theme of "educational practices that develop 21st century skills of children during preschool period".

In Table 2, it is seen that all participants expressed "technology-based activities" in the activities under the theme of "educational practices that develop children's 21st century skills". One participant, emphasizing "technology-based activities", said *"Both abstract concepts become concrete for students, and also their development of 21st century skills is also supported through technology usage in class since students are at preoperational period."* (S4). Another participant (S2) said *"Coding activities or computer technologies develop their 21st century skills, and they enjoy learning since children view these activities as games. Drama and game activities, during which they are more actively involved, also support the development of these skills. Especially, their creative thinking skills and social skills develop"*. One participant who gave opinion in the "project activities" (S3) said *"Children who are doing group work approach a problem and try to solve it with different perspectives during project activities"*. Similarly, another participant, (S1), who stated 21st century skills can be developed through "project activities" said that *"Since students decide how to solve a problem by working in groups during project activities their social skills and*

different thinking skills develop." One participant (S2) voicing opinions in the "STEM activities" said *"STEM develops preschool children's social skills and creative thinking"*. Another participant (S4) also talked about "STEM activities" and stated *"Children's critical thinking and problemsolving skills develop starting from preschool period as a result of STEM activities"*. (S3) talking about "science activities", said *"Enabling children make predictions and inferences during experiments develops their 21st century skills"*. The same participant also said *"Asking questions which enable them think without any limitations or any fixed methods, and guiding them to make observations during art activities support these skills."* Another participant, (S1), voiced opinions about the "drama activities" and said *"Drama activities develop children's thinking and communication skills"*. One participant, who emphasized that "book reading activities" support children's development of 21st century skills, said *"Asking children to predict what happens next or asking them to finish the book with a different ending may develop children's thinking skills"* (S4).

The majority of the participants emphasized "creative thinking techniques" and "problem solving techniques" in the "methods and techniques" under the theme of "educational practices that develop children's 21st century skills". One participant, whose opinion was placed under "problem solving techniques", said *"It is effective to employ problem solving techniques in order for students to acquire 21st century skills. Students are generally active although individual support is needed from time to time"* (S1).

Another participant, (S3) said *"21st century skills can be developed by supporting the employment of creative*

Table 3. Sub-theme and code regarding supporting children's acquisition of 21st century skills during preschool period theme.

Theme	Sub-theme	Code	Participants
Supporting children's acquisition of 21st century skills during preschool period	Teacher characteristics	Having digital literacy skills	S1, S2, S3,S4
		Providing guidance	S2, S3, S4
		Effective integration of technology and activity process	S1, S2, S4
		Being creative	S1, S2, S3
		Acceptance of individual differences for 21st century skills	S1, S4
		Keeping up with professional innovations	S3
	Responsibilities of the family	Exerting technology control on children	S1, S2, S3, S4
		Teaching children to use technology in a beneficial way	S1, S2, S4
		Supporting children's creativity	S1, S2, S3
		Supporting 21st century skills at home	S4
	21st century skills in preschool education program in Türkiye	The curriculum is not adequate	S1, S2, S3
		The outcomes and performance indicators regarding technology skills are not adequate in the curriculum	S1, S2, S3
The curriculum is sort of adequate		S4	
The outcomes and performance indicators regarding 21st century skills are not adequate in the curriculum		S1	
		The flexibility of the curriculum which supports 21 st century skills	S4

Source: Author.

thinking techniques. Children are able to use the technique when provided guidance". Another participant (S2) whose opinion was also placed under "creative thinking techniques" stated "Scamper technique is effective for developing creative thinking". Also, (S3) said "We can work on problem situations in which children can use problem solving techniques".

One participant who commented regarding "question-answer technique based on open ended questions" stated "Using question-answer technique based on open ended questions during classroom activities is effective to support reasoning for developing 21st century skills" (S4). (S1), giving a statement in the "cooperative learning" said "Children's social skills develop while working on cooperative learning groups". Another participant (S4), who commented on "Station Technique", said "Station technique supports the development of children's different thinking skills. Children will develop different thinking strategies suitable to each different station". The following Table 3 presents themes regarding supporting children's acquisition of 21st century skills during preschool period, sub-themes and codes determined after data analysis.

As seen in Table 3, teacher characteristics, responsibilities of the family, 21st century skills in preschool education program in Türkiye are sub-themes and codes under the theme of "supporting children's acquisition of 21st century skills during preschool period". In Table 3, it is seen that all participants expressed "teachers' owning digital literacy skills" in the teacher

characteristics under the theme of "supporting children's acquisition of 21st century skills during preschool period". In line with this, one participant said "A preschool teacher should be able to use technology effectively. For example, there are smart boards in most classrooms, and yet some teachers never use them. A teacher's willingness to use technological innovations is necessary from 21st century point of view" (S4). Another participant stated "Being a preschool teacher who keeps up with technological innovations and being open to new developments are among the characteristics of being a teacher who develops children's 21st century skills" (S3). Most of the participants used the expressions "guidance", "effective integration of technology and activity process" and "being creative" for teacher characteristics in the theme of "supporting children to acquire 21st century skills during preschool period".

As seen from Table 3, one participant said "Teachers' giving an opportunity to children's self learning during preschool period and providing guidance to them when they need it is a way to develop children's 21st century skills" (S2) regarding providing guidance. Also, (S4), emphasizing teachers' role as a guide, stated "By being a guide, teachers should support children's cognitive apprenticeship". Teachers should support children's cognitive apprenticeship". Concerning effective integration of technology and activity process, (S4) stated "Using technology in classroom positively affects children's development of 21st century skills but smart boards are not for using the Internet only, the most important thing is

teachers' having adequate knowledge on how to combine this technology with activities". Regarding "effective integration of technology and activity process", another participant, (S2) also stated "Activities that I combine games with technology become very entertaining and fruitful since children are preschool age. For example, I use games developed by coding while teaching colors. Sometimes I make them listen to stories using technology and sometimes I make them watch videos suitable to the content of the activity and we talk about the video afterwards". (S1), mentioned creativity under "characteristics of teachers who support children's acquisition of 21st century skills", and said "It is important for a preschool teacher to be creative, for example, a teacher should be a role model for their students by being curious and being open to discoveries, having questioning skills and respecting different opinions". Another participant, (S2) commented on and said "A teacher should be flexible and have creativity". (S1) whose opinion was about "acceptance of individual differences as 21st century skills" said "Similar to the development of all skills, a preschool teacher should provide students with a variety of activities by accepting students' individual differences and interests during their development of 21st century skills. For example, one student can acquire skills through drama activities more easily because h/she is interested in drama whereas another student acquire these skills through table games played in groups. The awareness of the teacher will positively affect children's acquisition of 21st century skills". Another participant, (S3), commented on "keeping up with professional innovations" under "teacher characteristics that support children's acquisition of 21st century skills" and stated that "Teachers should be professionally knowledgeable about up-to-date methods and activities in order to support the development of students' 21st century skills during preschool. It is necessary to be informed about techniques that develop creativity, and activities such as STEM and coding etc". All participants stated about "exerting technology control" with the concerning "responsibilities of family to supporting children's acquisition of 21st century skills during preschool period". One participant said "In terms of 21st century skills, children's computer and Internet usage should take place with the condition of paying attention to some points. Families should be conscious of the children's computer and Internet usage" (S1). Another participant, (S3), talking about the same code said "Preschool children's starting to use technology is a 21st century skill. But the important thing is families' keeping track of how much time children spend on technology and taking the necessary precautions".

The majority of the participants stated "teaching children how to use technology in a beneficial way" and "supporting children's creativity" under the "responsibilities of family" to support children's acquisition of 21st century skills during preschool period. One participant, (S2),

talked about "teaching children to use technology in a beneficial way" and said "Families should not leave children alone and on their own with technology and the Internet. Families should guide their children in that technology can be used for many purposes other than playing games". Similarly, another participant (S4) also said "Families should limit children's playing computer games and teach them that technology can be used for other purposes. For example, they can make their children watch documentaries appropriate to their age". (S3) commenting on "families' supporting children's creativity" said "Families should answer the questions that children ask openly and clearly and they should ask open ended questions which give them an opportunity to think in a multidimensional manner to support their creativity". (S2), also talking about the supporting children's creativity, said "Families should support their children's asking questions and should give them opportunities to think in order to foster their creativity".

One participant, concerning "supporting children's 21st century skills at home", said that "Supporting children's skills at home that they acquire at school is a valid approach for supporting their 21st century skills too. For example, children are away from school on the weekends and during long summer holidays, therefore their skills should be supported at home too" (S4).

The majority of the participants stated "the curriculum is not adequate" and "the outcomes and performance indicators regarding technology skills are not adequate in the curriculum" under the "21st century skills in preschool education program in Türkiye" to support children's acquisition of 21st century skills during preschool period. One participant, (S3), commenting on "the curriculum is not adequate", said "I think the curriculum is not adequate to develop 21st century skills of children because when we look at the skills that should be developed, the outcomes and performance indicators regarding technology skills are not adequate. In addition, the curriculum does not guide teachers in terms of activities concerning technology use such as coding activities". Similarly, another participant commented and said "The curriculum is not adequate. I think outcomes and performance indicators, concepts and material examples regarding skills on how to use technology should be added" (S2).

Also another participant, (S1), voicing opinion on "the outcomes and performance indicators regarding 21st century skills are not adequate in the curriculum" stated "The curriculum is not adequate. There should be an activity guide that explains how to put theoretical information into practice while teaching 21st century skills". One participant who thinks "the curriculum is sort of adequate" said "The curriculum is sort of adequate to teach 21st century skills because the curriculum is flexible. A teacher can benefit from the flexibility of the curriculum if s/he wants to develop these skills even if 21st century skills were not directly stated" (S4). Table 4

Tablo 4. Sub-theme and code regarding difficult processes during children’s acquisition of 21st century skills during preschool period theme.

Theme	Sub-theme	Code	Participants
Difficult processes during children’s acquisition of 21st century skills during preschool period	Difficulties	Technological conditions of schools	S1, S2, S3, S4
		Teachers’ level of readiness	S2, S3, S4
		Families’ level of readiness	S1, S2
		Socio-demographic conditions	S1, S4
		That 21st century skills’ being abstract	S3
		Teachers’ guidebook that develop children’s 21st century skills	S1, S2, S3, S4
	Solutions for difficulties	Family training	S1, S2, S3
		Improvement of technological infrastructure at schools	S1, S2, S3
		Teacher training	S1, S2, S4
		Addition of 21st century skills to preschool curriculum	S2, S4
		Investigation of how different countries teach 21st century skills during preschool period	S3

Source: Author

presents themes regarding difficulties that teachers face during children’s acquisition of 21st century skills during preschool period, sub-themes and codes determined after data analysis.

As seen in Table 4, there are difficulties; solutions for difficulties are sub-themes and codes under the theme of “difficulties that teachers face during children’s acquisition of 21st century skills during preschool period”. In Table 4, it is seen that all participants expressed “technological conditions of schools” as the difficulties under the theme of “difficulties that teachers encounter during children’s acquisition of 21st century skills during preschool period”. Regarding this, one participant said “The infrastucture and hardware is not adequate and technological materials are not available at schools” (S3). Similarly, (S1) stated “Technological conditions are limited in my classroom, for example I don’t have a smart board. I try to do things with my own computer and with my own materials”. The majority of participants voiced opinions regarding “teachers’ readiness”.

One participant (S4) stated “No difficulties will be experienced during children’s acquisition of 21st century skills if the activities are simple and age appropriate. Teachers may experience difficulties. Some teachers may be more closed to innovations”. Another participant (S2), commenting on, said “Especially if a teacher is traditional they may experience more difficulties while children are acquiring 21st century skills or they may act in an authoritarian manner and may not push children into questioning. Some teachers may also be reluctant to use technology”. One participant, (S2), talking about “families’ readiness” said “Families can be our biggest problem. Families and teachers should stand parallel to each other while children are acquiring these skills”. (S1) also said “Families’ being informed about 21st century skills and their having 21st century skills are very important for children’s development of these skills. But there are problems regarding this”.

One participant talked about “socio-demographical conditions” and said “Families’ of

low education level and low income level is one of the problems faced while children are acquiring 21st century skills. This sometimes creates inequality of opportunity among students” (S1). Another participant said “Poor conditions can create difficulties in children’s acquisition of 21st century skills. When I consider the schools I have taught so far I believe conditions create differences among children” (S4). Another participant talked about “21st century skills’ being abstract” and said “That 21st century skills are abstract causes problems. Especially when adequate materials are not provided. Then those skills stay abstract for children” (S3). As seen from Table 4, all participants expressed “teachers’ guidebook that develop children’s 21st century skills” in the solutions for difficulties under the theme of “difficulties in children’s acquisition of 21st century skills during preschool period”. Regarding this, one participant said:

“Having supplementary curriculum to the existing

curriculum or a curriculum which offers examples of activities that teachers can employ in their classes can reduce the difficulties that teachers experience" (S2). Similarly, another participant (S1) said "Domains of development in the curriculum can be restructured by including 21st century skills. By doing so, teachers can know the outcomes and performance indicators that they have to teach for each skill".

Also, majority of the participants talked about "family training", "improvement of technological conditions at schools", "teacher training", and "addition of 21st century skills to preschool curriculum". Talking about "family training", one participant said:

"Family training concerning 21st century skills is important because children can attain equality of opportunity by this way" (S3). Similarly, another participant (S2) said "Parents should be informed about 21st century skills. The difficulties will decrease when they are more informed and more conscious about them". One participant, (S3), talked about "improvement of technological conditions at schools" and said "Technological conditions at schools should be improved. In addition, providing technological devices to all schools create equality of opportunity. Similarly, (S1) said "If I had a smart board in my classroom all the difficulties I experience while teaching these skills will be reduced". One participant, talking about "teacher training", said

"Teachers should be given training regarding 21st century skills and how to teach them. For example, majority of the preschool teachers do not know about STEM activities that can be used to teach 21st century skills. Teachers should first be given training on how to teach them. They should believe the importance of children's development of these skills and turn children's interests into an opportunity to teach these skills" (S4).

A similar opinion was raised by (S1) who said "If I have to make a self criticism, I have to confess I don't have enough knowledge about 21st century skills, and I would like to participate in training sessions on how to develop children's 21st century skills". One participant, (S4) proposed the addition of 21st century skills to preschool curriculum and said "The preschool curriculum is very general and open ended, therefore, the curriculum can be better if 21st century skills are added". Similarly, (S2) talking about the same code, "Educational outcomes and performance indicators that can be achieved through technology literacy, STEM and creative thinking techniques can be added to the preschool curriculum".

One participant who suggested the "investigation of how different countries teach 21st century skills during preschool period" said "How different countries teach 21st century skills during preschool period today can be investigated, and we can think about how we can adopt

them in our country. Studies conducted on preschool education should be followed" (S3).

DISCUSSION

In the discussion section, the research sub-questions were answered based on the research findings and the literature. Based on the participants' experiences, 21st century skills during preschool period will be discussed in this part of the research while supporting literature is provided.

21st century skills that they want students to develop during preschool period based on the experiences of masters' students studying Preschool Education Program

21st century skills during preschool period

All of the master's student participants stated "creative thinking skills" under the theme of "21st century skills during preschool period". Creative thinking skills also take place among 21st century skills during preschool period (P21, 2109a; P21, 2019b). In addition, majority of the participants talked about social skills, digital literacy skills and different thinking skills among 21st century skills and that shows similarity to the literature (Eckhoff, 2011; P21, 2109a; P21, 2019a; Yalçın et al., 2020). Today it is generally accepted that preschool children are not passive members of the digital world anymore (Rosen and Jaruszewicz, 2009). Young children today can access computers, the Internet, electronic games and communication technologies, and their necessary skills develop fast because technology is a part of their lives (Benner and Hatch, 2010; Sayar and Benli, 2020).

When the opinions of preschool master's student participants are viewed, it is seen that their views are generally in harmony with 21st century skills stated in the literature. Even though objectives concerning technological skills are not given in the preschool education curriculum in Türkiye the majority of the participants mentioned these skills which indicates that they have awareness regarding children's need to acquire them.

The experiences of masters' students attending Preschool Education Program regarding the process of children's development of 21st century skills during preschool period

Educational applications that develop children's 21st century skills during preschool period

All of the preschool master's student participants voiced

opinions regarding technology based activities under activities that develop children's 21st century skills during preschool period. Today it is important to improve education through usage of technology and employment of instructional technologies and innovation in order to meet new generation teaching expectations and the needs of the society (Erstad and Zounek, 2018; Harkins, 2008; Kocaman-Karoğlu et al., 2020; Nedeva and Dineva, 2012). Especially games play an important role in children's acquisition of digital skills during preschool period (Erstad and Zounek, 2018; Qian and Clark, 2016).

Employment of technology during preschool period supports children's development of self respect, self control, communication, collaboration, critical thinking, problem solving, effective usage of memory and technology which are among social and cognitive skills (Kangal-Bencik and Özkızıklı, 2015; Chen and Chang, 2006; Özdemir and Çetin, 2015; Shahrinin and Butterworth, 2002; Haugland, 2000; Klein et al., 2000).

That employment of technological devices in activities while preschool children are taught information-technology and media skills, which are among 21st century skills, is thought to be beneficial. Usage of technological activities during preschool education supports the development of several 21st century skills that preschool children are wanted to acquire (Haugland, 2000; Kamalodeen et al., 2017; Sayan, 2016; McCarick and Xiaoming, 2007; Chen and Chang, 2006).

It is thought that the use of technological devices within the context of activities related to information-technology and media skills, which are among 21st century skill areas, will be beneficial in helping children's acquisition of 21st century skills through activities during preschool period. The use of technology-based activities in preschool education supports the development of many 21st century skills expected to be acquired during this period (Haugland, 2000; Kamalodeen et al., 2017; Sayan, 2016; McCarick and Xiaoming, 2007; Chen and Chang, 2006).

Majority of the master's students of Preschool Education expressed their opinions about STEM activities and project activities under the theme of activities that develop 21st century skills during preschool period. STEM activities, namely science, technology, engineering and mathematics education, have taken their place on the global agenda to support 21st century skills such as communication, collaboration, problem-solving, and creative and critical thinking (Kamalodeen et al., 2017). Supporting the views of the participants of this research, it is stated in the literature that preschool period STEM education will provide the interdisciplinary training of students and have 21st century skills (Balat and Günşen, 2017; Erdoğan and Çiftçi, 2017; Erol, Erol and Başaran, 2022; GÜNTAŞ, Özdem and Çelik İskifoğlu, 2019).

At the same time, children cooperate and interact with each other and actively participate in activities through the use of Web 2.0 computer technologies during STEM activities, (Haugland, 2000; O'Reilly, 2007). Koyunlu-Ünlü

and Dere (2019) stated that preschool teachers' awareness of STEM activities should be increased through laboratory practices and workshops in order to improve their knowledge and skills regarding STEM. Kennedy and Odell (2014), state that teachers should use innovative teaching materials to implement effective educational materials for STEM practices.

Preschool masters' students also stated that project activities are among those that develop children's 21st century skills. Literature also suggests similar results, and research suggests employment of project activities supports the development of children's 21st century skills (Bıçakçı, 2009; Danyi, 2002; Kurt, 2007).

Majority of the participants also included creative thinking techniques and problem solving techniques as methods and techniques that develop children's 21st century skills during preschool period. Similarly, research suggests education that supports children's creative thinking skills contributes children's development of creative thinking skills positively (Dziedziewicz and Karwowski, 2015; Hoffmann and Russ, 2016; İmran-Karadayı, 2018). Similarly, research concerning children's problem solving skills state that education given to support children's problem solving skills contributes children's problem solving skills positively (Akçay-Malçok and Ceylan, 2022; Bahar and Aksüt, 2020; Hong and Diamond, 2012; Kurupınar, 2022).

The experiences of the master's students about the educational applications that develop children's 21st century skills during preschool period generally contain similar information to the literature. However, when we look at the difficulties teachers experienced while teaching 21st century skills and their solutions to them it is seen that the participants want to receive training on how to develop children's 21st century skills effectively during the preschool period, both in theory and in practice.

Supporting children's acquisition of 21st Century skills during preschool period

All master's students studying preschool education expressed their experiences regarding having digital literacy skills in the theme of teacher characteristics that develop children's 21st century skills during preschool period. These views of master's students have been a subject of discussion in the literature. However, the results of different studies indicate that there are some problems in terms of teachers' usage of digital literacy skills. Häkkinen et al. (2017), state that teachers may experience inadequacies in their use of information and communication technologies in general. Similarly, Konca and Erden's (2021) research determine that Turkish preschool teachers have televisions, DVDs, computers and smartphones in their classrooms, and they generally prefer to use television and computers for activities. In addition, it is determined that preschool teachers'

attitudes towards using digital technology are positive, but they use digital technologies in small amounts in the classroom, generally to make children watch cartoons and listen to music. In addition, it is pointed out that teachers have difficulties in how to combine appropriate technology and educational activities in the classroom in order to use digital technologies effectively. Simsar and Kadim (2017), on the other hand, state that most of the teachers actively use information technologies mostly in music, Turkish and game activities, and they encounter some problems during this process. Another study points out that Turkish preschool teachers mostly use computers in musical activities and use computers approximately 1-2 times a week (Yurt and Cevher-Kalburan, 2011).

The majority of Preschool masters' students suggested combining technology with activities effectively, being creative and being a guide under the theme of teacher characteristics that develop children's 21st century skills. NAEYC (National Association for the Education of Young Children) (1996) suggested the integration of technology into learning as one of the factors that support children's cognitive and social skills. Rapid changes in technology created a need for the integration of technology with preschool education and literature suggests the importance of the employment of digital technologies into early childhood education (Erdoğan, 2015; Clements and Sarama, 2003; Haugland, 2000; Yelland, 2011; Marsh et al., 2005; Ghaith and Yaghi, 1997). It is pointed out that children's self confidence, taking responsibility of their own learning and problem solving skills improve when they actively participate in the activities through computers (McCarick and Xiaoming, 2007). While some negative effects of technology usage during preschool education are stated it is also thought to be more important that how and for how long technology is used (Goodwin, 2018; Haugland, 2000; Samur, 2020; Sayar and Benli, 2020). A need has arisen to use technology for preschool education since computers have become an indispensable part of life.

Having creative thinking skills during preschool period is a 21st century skill (P21, 2019a), and teachers who will develop these skills should also show creative features (Yenilmez and Yolcu, 2007). Preschool teachers are educators and guides who support the development of the child and arouse the child's interest and curiosity in learning (Dağlıoğlu, 2009). As in all activities, it is important for the preschool teacher to use these features actively for the technology-based activities. Computer education, which is provided through the guidance of the teacher and the use of creative features during the preschool period, offers children the opportunity to develop in many areas that interest them. It is very important to combine technology with activities creatively in teacher-guided processes. Education through the computer is effective in the development of self-expression and concept development, creativity, critical

thinking, problem-solving skills, cooperation skills in reaching the goal, long-term memory and manual skills in terms of cognitive language development (Sayan, 2016). The correct use of computer technologies is seen as related to integrating activities with technology, using activities with and without technology in a balanced way, using them during group activities, and if possible, the program should be arranged for each child (Clements, 2002; Haugland, 2000).

While all of the preschool teaching master's students expressed an experience on the conscious technology control of the child in the theme of the responsibilities of the family in supporting children's acquisition 21st century skills during the preschool period, the majority of them expressed their opinion on teaching the child to use technology beneficially. Families can be informed about how to use technological tools such as computers they use at home. Conscious and appropriate use of technology is the duty of the family. However, it is important to cooperate with families in order for children to use technology appropriately, beneficially and in accordance with the rules in the home environment (Işıkoğlu-Erdoğan, 2015). Because researches show that there is a strong relationship between the screen viewing time for the media tools of the families with children in early childhood and the screen watching time of the children (Jago et al., 2012). Gündoğdu et al., (2016) aimed to inform parents about the harmful effects of media on children's health in their research on media in preschool children. He emphasized the importance of raising awareness among parents about the possible harmful effects of children's use of technological devices.

The majority of master's student participants voiced experiences regarding supporting the development of creativity of preschool children under the theme of responsibilities of the family in supporting children's acquisition 21st century skills during preschool period. Literature suggests freedom atmosphere in family in which children can voice their opinions and feelings openly, acceptance of children as individuals, enabling them take responsibility and providing them with psychological security are important for the development of children's creativity (Harrington et al., 1987).

The majority of the master's student participants stated that educational objectives in the curriculum are not adequate to develop children's 21st century skills under the theme of "21st century skills in preschool education program in Türkiye". They especially emphasized educational objectives and indicators regarding technology use skills are not adequate. In this context, it can be concluded that several investigations regarding preschool education program in Türkiye in different realms were conducted, and yet there is not adequate research regarding 21st century skills (Kardeş, 2020; Tuğluk and Özkan, 2019).

When the results of different studies on the subject are examined, it is seen that the results of this research are

compatible with them. Tuğluk and Özkan (2019) examined the inclusion of 21st century skills in the Turkish preschool education program, in which there were no goals and objectives exist regarding 21st century skills in the domains of psychomotor and self-care. In addition, the objectives regarding 21st century skills social-emotional, cognitive and language development domains were found to be 25.9% of the objectives of the entire curriculum. They determined that the indicators for 21st century skills correspond to 15.5% of the indicators in the program. Kardeş (2020), on the other hand, states that the Turkish preschool education program should be rearranged or revised in order to guide teachers in terms of 21st century skills and to provide children with the necessary 21st century skills. It is seen that the preschool education program mostly emphasizes entrepreneurship, responsibility, cultural awareness and research in terms of 21st century skills, and communication, creativity and problem-solving skills as competence skills. However, it is stated that the 2013 preschool education program is insufficient in terms of information, technology and media literacy, which are 21st century skills. Güngör (2021), in his research, states that when the 2013 Turkish preschool curriculum is examined in terms of 21st century skills determined in P21, there are gains related to critical thinking, problem solving, communication and media literacy, creativity, flexibility, adaptation, social and intercultural skills. It is stated that most of the gains related to 21st century skills are in the domain of social and emotional development, and it is explained that there is no acquisition related to motor development and self-care skills.

When we look at the practices abroad, it is seen that 21st century skills are included in the education programs of countries such as Australia, Canada, Finland, Belgium, Ireland, Italy, Norway and New Zealand (Anagün et al., 2016). In addition, strategies are being developed to integrate 21st century skills into preschool curriculum through policies in the United States. A framework was developed that supports teachers' understanding of how to design activities in formal and informal learning settings in order to develop children's 21st century skills (P21, 2109b).

Preschool teaching master's students' views on supporting children's acquisition of 21st century skills during preschool period are generally examined, and their views on family and teacher characteristics are compatible with the literature, and their views on the adequacy of 21st century skills in the Turkish National Ministry of Education Preschool Program are especially related to technology use skills. It is thought that the fact that they emphasized the inadequacy of the relevant acquisitions and indicators should be seen as an important opinion.

It can be concluded that the participants wanted the inclusion of technological skills into the curriculum and also wanted the betterment of technological conditions at schools.

The experiences of masters' students attending Preschool Education Program regarding the difficulties during the process of children's development of 21st century skills during preschool period

Difficult processes during children's acquisition of 21st century skills during preschool period

Master's students who are also preschool teachers expressed the technological conditions in their schools as difficulties experienced during children's acquisition of 21st century skills during preschool period most intensely. Similar to these views, in a study in which Turkish preschool teachers participated, 32.1% of the teachers stated that there was a computer in the classroom that children could use, and 67.2% of them stated that there was not a computer in the classroom that children could use. 62.6% of the teachers stated that there is a computer that the teacher can use in the classroom and 36.6% of them stated that there is no computer that the teacher can use in the classroom. 56.5% of the teachers' state that they have Internet connection in the classroom, 42.7% of them state that there is no Internet connection in the classroom, and most of the teachers have received computer training. In addition, it was determined in the study that 42% of the teachers stated that they use technology outside of educational purposes (Orçan et al., 2017).

Similarly, it has been investigated whether the physical environment in preschool in Cyprus is suitable for the 21st century learning environment and whether it supports the needs of children and the development of twenty-first century skills. It has been determined that the physical environment is moderate in quality and has a traditional structure that does not conform to the recommendations of 21st century (Rentzou, 2021). Regarding the difficulties experienced in children's acquisition of 21st century skills during preschool period, the majority of preschool teaching master's students expressed that it is the level of teachers' readiness. Therefore, considering early childhood is a critical period for learning and development, preschool teachers should be supported to use computers effectively and to combine activities and technology both in undergraduate education and in-service training (Blackwell et al., 2013; Bayhan et al., 2002).

As a solution proposal for the difficulties in gaining 21st century skills during the preschool period, preschool teaching graduate students most intensely expressed the practical activity guide related to 21st century skills. In our country, a practical activity guide on 21st century skills has not been developed yet, but a framework guide that supports understanding how to practice 21st century skills in formal and informal learning environments in the preschool period in the United States is presented and adults are guided through specific examples based on practice related to 21st century skills in preschool period.

These guidelines have been formally prepared for preschool institutions and informally for use in settings such as home (P21, 2109b).

As a solution suggestion for the difficulties in children's acquisition of 21st century skills during preschool period, the majority of preschool teaching master's students stated that family education, teacher training, development of technological equipment in the classroom and adding 21st century skills to the preschool education curriculum. As a result of the literature review, it was determined that the views of the graduate students who are also preschool teachers were similar to the results of the studies on the subject (Blacwell et al., 2013; Bayhan et al., 2002; Gündoğdu et al., 2016; Orçan et al., 2017; Rentzou, 2021). The National Research Council (NRC) (2011) states that students are expected to develop 21st century skills such as problem solving, critical thinking, communication, cooperation and self-management. For this reason, it is important to prepare training programs that enable development of 21st century skills, and to provide teachers and teacher candidates with pre-service and in-service training regarding 21st century skills (Tuğluk and Özkan, 2019).

When the opinions of Turkish master's students attending Preschool Education Program about the difficult processes concerning children's acquisition of 21st century skills during preschool period and the solutions for these difficulties are examined, it is thought that it is important to evaluate the technological opportunities in the current educational environments. In addition, specifying the level of readiness of teachers as another difficulty suggests that teachers' undergraduate education and in-service training should be reviewed in this context. The fact that master's students attending Department of Preschool Education pointed out the importance of teacher education, family education, and suggested preparation of a practical activity guide concerning 21st century skills and addition of 21st century skills into the preschool curriculum as solutions is important for children's development of 21st century skills during preschool education. Although the participants knew how to apply some activities, methods and techniques it is also thought that the participants needed additional training concerning how to teach these skills. All of the teachers stated that they had problems with technological conditions at school. As a solution, it is seen that besides improving the technological infrastructure in schools, all teachers suggest preparing a practical activity guide. In this case, it is thought that teachers need guidance on how to combine technology and activities. It can be said that all teachers are aware of the importance of using and producing information digitally for activities, as digital literacy skills are stated by all teachers in the teacher characteristics that support the acquisition of 21st century skills. It is thought that these results will contribute in many ways to the creation of suitable educational environments to be offered for the development of 21st

century skills.

Conclusion

In conclusion, it was found that masters' students studying Preschool Education have some knowledge concerning the development of 21st century skills of children during preschool period, and they design some activities based on their knowledge. However, they encounter some difficulties during the activity development phase. It was also found that they often emphasized their experiences regarding technological skills and difficulties they encounter. The findings of this research is expected to contribute the studies on curriculum development, planning and quality improvement regarding 21st century skills, and the needs of preschool children.

Suggestions

Based on the findings of this study, carried out to examine the views of master's students attending Preschool Education Program in Türkiye, regarding children's development of 21st century skills during preschool period; it is recommended to conduct experimental research regarding children's acquisition of 21st century skills during preschool period and conduct research observing preschool teachers' in classes while they are developing children's 21st century skills. In addition, studies concerning the evaluation of the development of 21st century skills of preschool children and scale development studies can be carried out. Also research investigating technological competencies of preschool teachers and investigating the facilities in educational environment can be conducted, Curriculum development studies aiming at children's development of 21st century skills during preschool period and research investigating parents' roles when children acquire 21st century skills during preschool period can be done.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

REFERENCES

- Akçay-Malçok B, Ceylan R (2022). The effects of STEM activities on the problem-solving skills of 6-year-old preschool children. *European Early Childhood Education Research Journal* 30(3):423-436.
- Allen JP, Van der Velden RKW (2011). Skills for the 21st century: Implications for education. Ministerie van Onderwijs, Cultuur en Wetenschappen. ROA External Reports. Available at: <https://doi.org/10.26481/UMAMET.2012043>
- Altınpulluk H, Yıldırım Y (2021). 2010-2019 yılları arasında yayınlanan 21. Yüzyıl becerileri araştırmalarının incelenmesi [Examination of 21st-century skills researches published between 2010-2019].

- Anadolu Journal of Educational Sciences International 11(1):438-461.
- Anagün Ş, Atalay N, Kılıç Z, Yaşar S (2016). Öğretmen adaylarına yönelik 21. yüzyıl becerileri yeterlilik algıları ölçeğinin geliştirilmesi: geçerlik ve güvenilirlik çalışması [The development of a 21st century skills and competences scale directed at teaching candidates: validity and reliability study]. Pamukkale University Journal of Education 40:160-175.
- Ata-Aktürk A, Demircan HÖ, Şenyurt E, Çetin M (2017). Turkish early childhood education curriculum from the perspective of stem education: A document analysis. Journal of Turkish Science Education 14(4):16-34.
- Auld E, Morris P (2019). The OECD and IELS: Redefining early childhood education for the 21st century. Policy Futures in Education 17(1):11-26.
- Bahar M, Aksüt P (2020). Investigation on the effects of activity-based science teaching practices in the acquisition of problem solving skills for 5-6 year old pre-school children. Journal of Turkish Science Education 17(1):22-39.
- Balat GU, Günşen G (2017). Okul öncesi dönemde stem yaklaşımı [Stem approach in pre-school period]. The Journal of Academic Social Science 42:337-348.
- Barfield A (2016). Collaboration. *Elt Journal* 70(2):222-224.
- Bayhan P, Olgun P, Yelland NJ (2002). A study of pre-school teachers' thoughts about computer-assisted instruction. *Contemporary Issues in Early Childhood* 3(2):298-303.
- Benner SM, Hatch JA (2010). From the editors: Preparing early childhood educators for 21st century children. *Journal of Early Childhood Teacher Education* 31(2):103-105.
- Bıçakçı YM (2009). Proje yaklaşımına dayalı eğitimin altı yaş çocuklarının gelişim alanlarına etkisinin incelenmesi [A study on the effects of project approach education on the developmental areas of six-year old children]. Unpublished doctoral dissertation. Ankara University.
- Blackwell CK, Lauricella AR, Wartella E, Robb M, Schomburg R (2013). Adoption and use of technology in early education The interplay of extrinsic barriers and teacher attitudes. *Computers and Education* 69:310-319.
- Bertrand MG (2019). STEAM education in Ontario, Canada: A case study on the curriculum and instructional models of four K-8 STEAM programs. Unpublished master dissertation. The University of Western Ontario.
- Cahill M (2017). The early years career development for young children. Ceric Foundation House.
- Chen J, Chang C (2006). Using computers in early childhood classrooms: Teachers' attitudes, skills and practices. *Journal of Early Childhood Research* 4(2):169-188.
- Cheyne JA, Rubin KH (1983). Playful precursors of problem solving in preschoolers. *Developmental Psychology* 19:577-584.
- Clements DH, Sarama J (2003). Young children and technology: What does the research say? *Young Children* 58(6):34-40.
- Clements DH (2002). Computers in early childhood mathematics. *Contemporary Issues in Early Childhood* 3(2):160-181.
- Cloney D, Picker K (2019). What can early childhood education and care settings teach us about skills for the 21st century? Australian Council for Educational Research, Research Conference pp. 83-88. Available at: https://research.acer.edu.au/cgi/viewcontent.cgi?article=1360&context=research_conference
- Creswell JW (2015). A concise introduction to mixed methods research. Sage Publications, Inc.
- Dağlıoğlu HE (2009). Okul öncesi öğretmenin özellikleri ve okul öncesi eğitime öğretmen yetiştirme. In: Haktanır, G. (Ed.), *Okul öncesi eğitime giriş* [Introduction to pre-school education] (pp. 39-80). Anı Publishing.
- Daniel M, Auriac E (2011). Philosophy, critical thinking and philosophy for children. *Educational Philosophy and Theory* 43(5):415-435.
- Daniel MF, Gagnon M, Pettier JC (2012). Philosophy for children and the developmental process of dialogical critical thinking in groups of preschool children. In Sutterby, J.A. (Ed.), *Early education in a global context* (159-181). Emerald Group Publishing Limited.
- Danyi D, Sebest H, Thomson A, Young L (2002). The Apple Project. *Early Childhood Research and Practice* 4(2):1-19.
- Dinler H, Simsar A, Yalçın V (2021). 3-6 Yaş çocukların 21. yüzyıl becerilerinin bazı değişkenler açısından incelenmesi [Examining 21st Century Skills of 3-6 Years Old Children in Terms of Some Variables]. *e-Kafkas Journal of Educational Research* 8:281-303.
- Düzgüner TT, Karabulut H, Kariper İA (2022). 21. yüzyıl becerileri ile ilgili yapılmış olan çalışmaların incelenmesi [An investigation of the studies related 21th century skills]. *Kırıkkale University Journal of Social Sciences* 12(1):179-200.
- Dziedziewicz D, Karwowski M (2015). Development of children's creative visual imagination: A theoretical model and enhancement programmes. *Education* 3-13 43(4):382-392.
- Eckhoff A (2011). Creativity in the early childhood classroom: perspectives of preservice teachers. *Journal of Early Childhood Teacher Education* 32(3):240-255.
- Elçi S (2021). Okul öncesi dönem çocuklarının 21. yüzyıl becerileri ile rekabet stilleri arasındaki ilişkinin incelenmesi [Examining the relationship between 21st century skills and competition styles of preschool children]. Unpublished master dissertation. İnönü University.
- Epstein AS (2015). Using technology appropriately in the preschool classroom. *Highscope Extensions* 28(1):1-19.
- Erodoğan I, Çiftçi A (2017). Investigating the views of pre-service science teachers on stem education practices. *International Journal of Environmental and Science Education* 12(5):1055-1065.
- Erol A, Erol M, Başaran M (2022). The effect of STEAM education with tales on problem solving and creativity skills. *European Early Childhood Education Research Journal* 30(3):423-436.
- Erstad O, Zounek J (2018). Digital youth and their ways of learning. *Studia Paedagogica* 3(4):5-10.
- Eryılmaz S, Uluyol Ç (2015). 21. yüzyıl becerileri ışığında FATİH projesi değerlendirmesi [Evaluation of FATİH project in the consideration of 21st century skills]. *Gazi University Journal of Gazi Educational Faculty* 35(2):209-229.
- Fessakis G, Gouli E, Mavroudi E (2013). Problem solving by 5-6 years old kindergarten children in a computer programming environment: A case study. *Computers ve Education* 63:87-97.
- Ghaith G, Yaghi H (1997). Relationships among experience, teacher efficacy, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education* 13(4):451-458.
- Gelen İ (2017). P21-Program ve öğretimde 21. yüzyıl beceri çerçeveleri (ABD Uygulamaları) [P21- 21st century skill frameworks in curriculum and instruction (USA practices)]. *The Journal of Interdisciplinary Educational Research* 1(2):15-29.
- Haugland SW (2000). Early childhood classrooms in the 21st century: Using computers to maximize learning. *Young Children* 55(1):12-18.
- Hong SY, Diamond KE (2012). Two approaches to teaching young children science concepts, vocabulary, and scientific problem-solving skills. *Early Childhood Research Quarterly* 27(2):295-305.
- Gündoğdu Z, Seytepe Ö, Pelit BM, Doğru H, Güner B, Arıkız E, Akçomak Z, Kale EB, Moran İ, Aydoğdu G, Kaya E (2016). Okul öncesi çocuklarda medya kullanımını [Media use by preschool-aged children]. *Journal of Health Sciences of Kocaeli University* 2(2):6-10.
- Güney-Manavoğlu A (2022). Okul öncesi öğretmenlerinin öğrencilerine kazandırmaya çalıştığı 21. yüzyıl becerileri [The 21st century preschool teachers try to gain their students skills]. Unpublished master dissertation. Pamukkale University.
- Güntaş S, Özdem S, Çelik İT (2019). Eğitim alanında STEM ve sosyal bilimlerle ilgili araştırmalar: içerik analizi [Research about social sciences and stem in the field of education: a content analysis]. *International Journal of New Trends in Arts, Sports & Science Education* 8(2):42-48.
- Güngör D (2021). Okul öncesi eğitim kurumlarına devam eden 5 ve 6 yaş grubu çocuklarının öz düzenleme becerileri ile 21. yüzyıl becerileri arasındaki ilişkinin incelenmesi. [Examining the relationship between self-regulation skills and 21st century skills of 5 and 6 year old children attending pre-school education institutions]. Unpublished Master Dissertation. Üsküdar University.
- Goodwin K (2021). Dijital dünyada çocuk büyümek: teknolojiyi doğru kullanmanın yolları [Raising your child in a digital world: finding a healthy balance of time without techno tantrums and conflict]. (T, Er, Trans.). Notos Publishing.
- Häkkinen P, Järvelä S, Mäkitalo-Siegl K, Ahonen A, Näykki P, Valtonen

- T (2017). Preparing teacher-students for twentyfirst-century learning practices (PREP 21): A framework for enhancing collaborative problem-solving and strategic learning skills. *Teachers and Teaching* 23(1):25-41.
- Harari YN (2020). 21.yüzyıl için 21 ders [21 Lessons for the 21st Century]. (S., Siral, Trans.). Kolektif Publishing.
- Harkins AM (2008). Leapfrog principles and practices: Core components of education 3.0 and 4.0. *Futures Research Quarterly* 24(1):19-31.
- Harrington DM, Block JH, Block J (1987). Testing aspects of Carl Roger's theory of creative environments: Child-rearing antecedents of creative potential in young adolescents. *Journal of Personality and Social Psychology* 52:851-856.
- Hoffmann J, Russ S (2012). Pretend play, creativity, and emotion regulation in children. *Psychology of Aesthetics, Creativity, and the Arts* 6(2):175-184.
- İşıkoğlu-Erdoğan N (2015). Okul öncesi dönemde sınıfta teknoloji kullanımı: Okul öncesi eğitimi ve teknoloji. In Bayhan, P (Ed.), Okul öncesi eğitimde teknolojinin rolü [The role of technology in preschool education] (pp.33-49). Hedef CS Publishing.
- İmran-Karadayı Ş (2018). Okul öncesi dönemde yaratıcılık eğitiminin yaratıcılık performansı, yönetici zihinsel işlevler ve duyu düzenleme becerilerine etkisi [The effects of creativity training on creativity performances, executive functions, and emotion regulation skills in preschool children]. Unpublished master dissertation. Ege University.
- Kangal-Bencik S, Özkızıklı S (2015). Teknoloji ve eğitim. In: Bayhan, P (Ed.), Okul öncesi eğitimde teknolojinin rolü [The role of technology in preschool education] (pp.9-32). Hedef CS Publishing.
- Jago R, Stamatakis E, Gama A, Carvalhal IM, Nogueira H, Rusado V, Padez C (2012). Parent and child screen-viewing time and home media environment. *American journal of preventive medicine* 43(2):150-158.
- Kamalodeen VJ, Figaro-Henry S, Ramsawak-Jodha N, Dedovets Z (2017). The Development of Teacher ICT competence and confidence in using Web 2.0 tools in a STEM professional development initiative in Trinidad. *Caribbean Teaching Scholar* 7:25-46.
- Karadağ F, Yıldız-Demirtaş V (2018). Çocuklarla felsefe öğretim programının okul öncesi dönemdeki çocukların eleştirel düşünme becerileri üzerindeki etkililiği [The effectiveness of the philosophy with children curriculum on critical thinking skills of pre-school children]. *Education and Science* 43(195):19-40.
- Kardeş S (2020). Okul öncesi eğitim programının 21. yüzyıl becerileri ve STEAM eğitimi bağlamında incelenmesi [Analysis of preschool education program in the context of 21st century skills and steam education]. *Journal of Theory and Practice in Education* 16(2):109-119.
- Kennedy TJ, Odell MRL (2014). Engaging students in STEM education. *Science Education International* 25(3):246-258.
- Kerdthaworn P, Chaichomchuen S (2021). A Learning model of STEM Education on cloud computing technology, to promote learning and innovation skills for students practicing teachers. *Journal of Physics: Conference Series* 1835:1-10.
- Klein PS, Nir-Gal O, Darom E (2000). The use of computers in kindergarten, with or without adult mediation; Effects on children's cognitive performance and behavior. *Computers in Human Behavior* 16(6):591-608.
- Kocaman-Karoğlu A, Bal-Çetinkaya K, Çimşir E (2020). Toplum 5.0 sürecinde Türkiye'de eğitimde dijital dönüşüm [Digital Transformation of Education in Türkiye in Society 5.0]. *Journal of University Research* 3(3):147-158.
- Konca AS, Erden FT (2021). Digital technology (dt) usage of preschool teachers in early childhood classrooms. *Journal of Education and Future* 9:1-12.
- Koyunlu-Ünlü Z, Dere Z (2019). Okul öncesi öğretmen adaylarının FeTeMM farkındalıklarının değerlendirilmesi [Assessment of pre-service preschool teachers' awareness of STEM]. *Erzincan University Journal of Education Faculty* 21(1):44-55.
- Kurt F (2007). Okul Öncesi Eğitim Kurumlarına Devam Eden Beş-Altı Yaş Çocuklarının Sosyal Uyum ve Becerilerine Proje Yaklaşımlı Eğitim Programlarının Etkisinin İncelenmesi [An examination of the effects of project based education programs on the social adaptation and social skills of five- and six-year-old children attending preschool]. Unpublished master dissertation. Gazi University.
- Kurupınar A (2022). Okul öncesi çocukların problem çözme becerilerine zekâ oyunları eğitim programının etkisi [The effect of intelligence games education program on preschool children's problem solving skills]. Unpublished master dissertation. Gazi University.
- Larson LC, Miller TN (2011). 21st century skills: Prepare students for the future. *Kappa Delta Pi Record* 47(3):121-123.
- LeCompte MD, Goetz JP (1982). Problems of reliability and validity in ethnographic research. *Review of Educational Research* 52(1):1-60.
- Lewis A, Smith D (1993). Defining higher order thinking. *Theory into Practice* 32(3):131-137.
- Liu EZ-F, Lin C-H, Liou P-Y, Feng H-C, Hou H-T (2013). An analysis of teacher-student interaction patterns in a robotic course for kindergartens children: A pilot study. *The Turkish Online Journal of Educational Technology* 12(1): 9-18.
- Marsh J, Brooks G, Hughes J, Ritchie L, Roberts S, Wright K (2005). Digital Beginnings: Young children's use of popular culture, media and new technologies. University of Sheffield Press. Available at: https://www.researchgate.net/publication/265183910_Digital_beginnings_Young_children's_use_of_popular_culture_media_and_new_technologies/link/5473599e0cf2d67fc036d3df/download
- McCarick K, Xiaoming L (2007). Buried treasure: the impact of computer use on young children's social, cognitive, language development and motivation. *AACE Journal* 15(1):73-95.
- Miles M, Huberman A (1994). *Qualitative Data Analysis. An Expanded Sourcebook*. Sage Publications.
- Nam D, Kim Y, Lee T (2010). The effects of scaffolding-based courseware for the Scratch programming learning on student problem solving skill. *ICCE2010* 723-727.
- National Research Council (2011). *Assessing 21st Century Skills: Summary of the Workshop*. National Library of Medicine. Available at: <http://www.nap.edu/read/13215/chapter/1>.
- National Association for the Education of Young Children (NAEYC) (1996). *Technology and young children-ages 3 through 8*. *Young Children* 51(6):11-16.
- National Association for the Education of Young Children (NAEYC) (2012). *Technology and interactive media as tools in early childhood programs serving children from birth through age 8*. Washington DC: National Association for the Education of Young Children and the Fred Rogers Center. Available at: https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/ps_technology.pdf
- Nedeva V, Dineva S (2012). *New learning innovations with Web 4.0. The 7th International Conference on Virtual Learning ICVL*. University of Bucharest and Transilvania University of Brasov, Romania. Available at: https://www.academia.edu/7569932/New_learning_innovations_with_Web_4_0
- Miles MB, Huberman AM (1994). *An expanded sourcebook qualitative data analysis*. Sage Publications.
- Onwuegbuzie AJ, Leech NL (2007) Sampling designs in qualitative research: making the sampling process more public. *The Qualitative Report* 12(2):238-254.
- Orçan KM, Kimzan İ (2017). Öğretmenlerin okul öncesi eğitimde teknoloji kullanımına ilişkin görüşlerinin incelenmesi [Investigation of teacher's interviews on the use of technology in preschool education]. *The Journal of International Education Science* 4(12):203-215.
- O'Reilly T (2007). What is web 2.0: design patterns and business models for the next generation of software. *Communications and Strategies* 65:17-37.
- Özdemir S, Çetin E (2015). Teknolojik ürünler ve teknolojik ürünlerin sınıfta kullanımı. In Bayhan, P (Ed), Okul öncesi eğitimde teknolojinin kullanımı [Use of technology in preschool education] (pp. 51-67). Hedef CS Publishing.
- Qian M, Clark KR (2016). Game-based Learning and 21st century skills: A review of recent research. *Computers in Human Behavior* 63:50-58.
- Partnership for 21st Century Skills (2019a). 21st century learning for early childhood guide. *BattleforKids*. Available at: <https://static.battleforkids.org/documents/p21/P21EarlyChildhoodGuide.pdf>
- Partnership for 21st Century Skills (2019b). 21st century learning for

- early childhood framework. BattleforKids. Available at: <https://static.battleforkids.org/documents/p21/P21EarlyChildhoodFramework.pdf>
- Partnership for 21st Century Skills (2019c). Framework for 21st century learning definitions. BattleforKids. Available at: https://static.battleforkids.org/documents/p21/P21_Framework_DefinitionsBFK.pdf
- Patton M Q (2002). Qualitative research and evaluation methods. Sage Publication.
- Plowman L, Stephen C (2013). Guided interaction: exploring how adults can support children's learning with technology in preschool settings. *Hong Kong Journal of Early Childhood* 12(1):15-22.
- Rentzou K (2021). Twenty-first-century skills and learning capacities and the physical environment of Cypriot preschool settings. *Early Child Development and Care* 191(2): 242-254.
- Rosen DB, Jaruszewicz C (2009). Developmentally appropriate technology use and early childhood teacher education. *Journal of Early Childhood Teacher Education* 30(2):162-171.
- Samur Y (2020). *Yeni bildirimleriniz var[You have new notifications]*. Nemesis Book.
- Sayan H (2016). Okul öncesi eğitimde teknoloji kullanımı [Using technology in preschool education]. 21. Century. *Journal of Education and Community Education Science and Social Researches* 5(13):67-83.
- Sayar K, Benli S (2020). Dijital çocuk [Digital child]. Kapı Publishing.
- Shahrimin MI, Butterworth DM (2002). Young children's collaborative interactions in a multimedia computer environment. *Internet and Higher Education* 4:203-215.
- Siew NM, Chin MK, Sombuling A (2017). The effects of problem based learning with cooperative learning on preschoolers' scientific creativity. *Journal of Baltic Science Education* 16(1):100-112.
- Scott CL (2015). The futures of learning 2: What kind of learning for the 21st century?. UNESCO Education Research and Foresight. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000242996>.
- Simoncini K, Lasen M (2018). Ideas about STEM among Australian early childhood professionals: How important is STEM in early childhood education? *International Journal of Early Childhood* 50:353-369.
- Simsar A, Kadim M (2017). Okul öncesi öğretmenlerinin bilişim teknolojilerini kullanma durumları ve bunun öğretime etkisi [The preschool teachers' information technology use and its impacts on teaching]. *Journal of Social Sciences* 7(14):127-146.
- Sylva K, Sammons P, Melhuish E, Siraj I, Taggart B (2020). Developing 21st century skills in early childhood: the contribution of process quality to selfregulation and pro-social behaviour. *Zeitschrift fur Erziehungswissenschaft* 23:466-484.
- Şenşeker E, Bilgin A (2008). Eleştirel düşünme ve öğretimi [Critical thinking and its teaching]. *Uludağ University Faculty of Arts and Sciences Journal of Social Sciences* 14(1):15-41.
- Şimşek FM, Tuğluk MN (2021). Review on montessori educators' opinions concerning the digital assessment tool they use in terms of 21st-century skills. *Education Quarterly Reviews* 4(1):291-306.
- Topçu S, Çiftçi A (2018). 21.yüzyıl becerileri ve STEM. In Öğretim-Özçelik AD, Tuğluk NM (Eds.), *Eğitimde ve endüstride 21.yüzyıl becerileri [21st century skills in education and industry]* (pp.103- 123). Pegem Academy.
- Tavlı BS (2007). 6 yaş grubu anasınıfı öğrencilerinin problem çözme becerilerinin karşılaştırmalı olarak incelenmesi [The survey of 6-age preschool students problem solving skills as comparatively]. Unpublished Master Dissertation. Abant İzzet Baysal University.
- Tuğluk MN, Özkan B (2019). MEB 2013 okul öncesi eğitim programının 21. yüzyıl becerileri açısından analizi [Analysis of MoNE 2013 preschool education program in terms of 21st century skills]. *Journal of Primary Education* 1(4):29-38.
- Turiman P, Omar J, Daud AM, Osman K (2012). Fostering the 21st century skills through scientific literacy and science process skills. *Procedia-Social and Behavioral Sciences* 59:110-116.
- Türk Sanayicileri ve İş İnsanları Derneği (TÜSİAD). (2017). 2023'e doğru Türkiye'de STEM gereksinimi [STEM version in Türkiye towards 2023]. TÜSİAD yayınları. Available at: <https://tusiad.org/tr/yayinlar/raporlar/item/9735-2023-e-dog-ru-tu-rkiye-de-stem-gereksinimi>.
- United Nations International Children's Emergency Fund (UNICEF) (2019). A World ready to learn. UNICEF. Available at: <https://www.unicef.org/media/57926/file/A-world-ready-to-learn-advocacy-brief-2019.pdf>
- Voogt J, Roblin NP (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies* 44(3):299-321.
- Yalçın V, Simsar A, Dinler H (2020). 5-6 yaş çocukları için 21. yy Becerileri Ölçeği (DAY-2): Geçerlilik ve güvenilirlik çalışması [21st century skills scale for children 5-6 years (day-2): validity and reliability study]. *Mediterranean Journal of Educational Research* 14(32):78-97.
- Yaşar MC, Aral N (2010). Yaratıcı düşünme becerilerinde okul öncesi eğitimin etkisi [Yaratıcı düşünme becerilerinde okul öncesi eğitimin etkisi]. *Journal of Theoretical Educational Science* 3(2):201-209.
- Yelland N (2011). Reconceptualising play and learning in the lives of young children. *Australasian Journal of Early Childhood* 36(2):4-12.
- Yenilmez K, Yolcu B (2007). Öğretmen davranışlarının yaratıcı düşünme becerilerinin gelişimine katkısı [Contributions of teachers' behaviors on creative thinking abilities]. *MANAS Journal of Social Studies* 18:95-105.
- Yıldırım A, Şimşek H (2008). Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in the social sciences] (6th edition.). Seçkin Publishing.
- Yurt Ö, Cevher-Kalburan N (2011). Early childhood teachers' thoughts and practices about the use of computers in early childhood education. *Procedia Computer Science* 3:1562-1570.
- Yuvacı Z, Dağlıoğlu HE (2018). Okul öncesi eğitim alan çocukların ve buldukları sınıf ortamının yaratıcılık düzeyleri arasındaki ilişkisinin incelenmesi [Examining the relationship between the creativity levels of the classroom environment and the preschool children]. *Journal of Early Childhood Studies* 2(2):234-256.
- Zahra P, Yusooff F, Hasim MS (2013). Effectiveness of training creativity on preschool students. *Procedia-Social and Behavioral Sciences* 102:643-647.

Full Length Research Paper

Contextualizing Fayol's 14 principles in managing school systems in Tanzania

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This paper provides a modest contribution to understanding how Fayol's principles can be contextualised and applied in the administration of school systems in Tanzania and beyond. A qualitative approach is adopted to review journal articles that analyse Fayol's 14 principles and compares their suitability to the current management of school systems in Tanzania. A descriptive analysis was conducted to examine the typical structure and operations of school systems in Tanzania in line with Fayol's principles. Fayol's principles are reviewed and analysed to conceptualise them in school management and administration. While the literature and anecdote on Fayol's principles on the administration of business and industrial systems are clear, its contextualisation in the administration of school systems is rare, particularly in Tanzania. Therefore, the match of Fayol's principles was evaluated concerning the management of the education system as articulated in educational policies, educational sector reports and government circulars. Document analysis reveals that Fayol's 14 principles work better in a decentralised schooling system than in centralised authorities and procedures. There is a high linkage in the usability of Fayol's 14 principles in Tanzania's schooling systems concerning the decentralisation of primary and secondary education management to the local level context. This paper recommends further studies to explore the existing structures and administration of the education sector at different levels of schooling. Further review and analysis of Henry Fayol's administrative principles are recommended using different research approaches and designs.

Key words: Fayol's principles, school administration, education structure, Education policies, Tanzania.

INTRODUCTION

Management can be regarded as a natural phenomenon, as everyone is automatically engaged in managing their families, money, time, and career professions as managers. However, it was only after the emergence of

the 19th-century industrial revolution in Europe that brought formalised managerial activities (Bush et al., 2012; Donnelly, 1966; Schachter, 2016; Leithwood, 2021; Mahoney, 2002; Muldoon et al., 2018). High demand for

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effective and efficient management systems to organise the newly risen industries and people working in these industries provoked the scientists such as Taylor, Fayol, Weber, Mayo, Maslow, and McGregor to seek the best way to manage workers, resources and time (Schachter, 2016; Mbalamula et al., 2017; Uzuegbu and Nnadozie, 2015). Industries and other entities now needed skilled staff to forecast demand and ensure a sufficient supply of materials and staff to perform daily activities for improving production (Hersey et al., 2007). The revolution activated mindset changes among the industry owners to think of better ways of performing different organisational activities. The different views of improving industrial production generated different theoretical approaches to managing people, machines, and goods production, such as scientific, administrative, and human thought approaches.

Taylor and Fayol were significant contributors to modern management science. Taylor believed that an organisation could increase productivity and work efficiently by increasing workers' salaries (Schachter, 2016; Suru and Mwampulo, 2021). Taylor's approach relied on scientific procedures in executing tasks to enhance workplace performance through selecting workers, professional training, division of labour, and close supervision of workers. Fayol propounded that all managers perform five essential functions: planning, organising, commanding, coordinating, and controlling (McNamara, 2009). Fayol believed that managerial functions and their principles apply to all organisations, and we believe that schools, can apply similar principles to manage challenges of improper use of resources due to their scarcity (Adam, 2018; McNamara, 2009). The ideas of the two scholars were to forecast the applicability of managerial functions that is, planning, organising, commanding, coordinating, and controlling, which seems relevant in today's management of organisations (Gupta, 2022; Mbalamula et al., 2017; Sharma and Shakir, 2019). In the modern management, as it was in the classical management, educational institutions cannot escape from the practices of managerial functions and principles raised by Taylor and then Fayol. These functions and principles practically apply in managing schools across countries. However, the current study focuses on the practicability of 14 principles of management postulated by Fayol in Tanzania school systems.

METHODOLOGY

The current paper is guided by qualitative research focusing on document reviews. Document reviews were dichotomised into an analysis of both empirical and theoretical papers on Fayol's principles, on the one hand, the analysis of education sector policy documents and programme development reports. Both printed and internet-transmitted (hard and soft copy) materials were identified and systematically determined for review and analysis. Since paper articles and sector documents carry meanings through text and images without a researcher's intervention, they represented a qualitative approach in this paper. The document analysis

examined texts (words), cultural artefacts, and images as social realities likely to produce and share meanings embedded within them (Cardno, 2018; Guo and Chang, 2023). Generally, document analysis is a valuable research method in analysing various authentic documents like books, newspaper articles, academic journal articles, government and institutional reports, and circulars (Cardno, 2018; Morgan, 2022). Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted to elicit meaning, gain understanding, and develop empirical knowledge. In the review process, journal articles, books, educational circulars, educational sector documents, educational programme reports and government circulars on education were analysed to understand how Fayol's principles are contextualised in the management of the school system in Tanzania. In addition, texts from the documents above were evaluated to understand the application of Henry Fayol's 14 principles in the management of schools concerning 1) the structure and operations of school systems in Tanzania, 2) contextualising Fayol's principles with educational policies and planning in Tanzania, 3) Fayol's principles in the context of school administration procedures in Tanzania, 4) the match between Fayol's principles and the structure of education in Tanzania, and 5) contextualising Fayol's principles in the management of teachers' welfare. The conclusion and recommendation of this paper are derived from the meanings and phenomenal attribution determined from these relationships.

Application of Henri Fayol's 14 principles

Historically, Fayol (1841-1925) was a mining engineer and the iron and steel company director, which later became the country's biggest industrial manufacturer in French. Fayol gained experience from research endeavours while working with thousands of workers. In 1916, Fayol published the 14 principles of management in his book entitled "General and Industrial Administration in 1917" (Uzuegbu and Nnadozie, 2015). Fayol's 14 principles are based on testing various theories toward a successful organisation's management process. Fayol's 14 principles, developed 97 years ago, are today regarded as the forerunners of management scholarship (Adam, 2018; Godwin et al., 2017; Uzuegbu and Nnadozie, 2015). Fayol believed that the 14 principles apply in many organisations, including education institutions because all organisations face similar problems in managing resources, specifically humans and time.

Fayol's fourteen principles focus on the division of labour, authority and responsibility, centralisation, discipline, and unity of command. Other principles are the unity of direction, and subordination of individual interests to general interests, payment for staff, scalar chain, order, equity, stability of tenure, initiative, and esprit de corps (Godwin et al., 2017; Gupta, 2022; Mehta and Yadav, 2014; Uzuegbu and Nnadozie, 2015). Management scholars believe Fayol's 14 principles are significant in managing the old-fashioned school of management and the school organisations of the 21st century. However, some principles are discussed based on their application in the education systems in Tanzania, specifically in school settings.

Structure and operations of school systems in Tanzania

The operations of school systems in Tanzania are implicitly or explicitly organised within the framework of Fayol's 14 principles of management. Again, even the government directives on education provisions are framed based on good governance within the essence of management principles and public administration functions. The structure and operations of the school system in Tanzania are a replica of management functions of forecasting, planning, organising, coordinating, commanding, and controlling. The reforms and changes of laws, policies, and regulations in the education sector in Tanzania since independence in 1961 manifest the application of Fayol's 14 principles. These changes automatically lead to changes in the structural principles and substantial changes in management functions in the management of education (Wren et al., 2002).

Contextualizing Fayol's principles with educational policies and planning in Tanzania

The remarkable change in education policies and programmes took place after the inauguration of the Education and Training Policy (ETP) in 1995 and, more recently, in 2014. The changes in policy in education were followed by sector-wide reforms, including the inauguration of the Education Sector Development Programme (ESDP), Local Government Reform Programme, Strategy for Poverty Reduction and Development, and the National Vision 2025. The ESDP came with the Primary Education Development Plan (PEDP) and Secondary Education Development Plan (SEDP) in 2001 and 2004, respectively. The two-five years plan marked the cornerstones of starting the international initiative of Universal Primary Education and the improvement of secondary education within the more comprehensive Tanzania policy frameworks (URT, 2001; 2006).

The inception of PEDP and SEDP was to materialise the country's commitment to global educational goals set for improving access, equity, and equality of education as articulated in Jomtien 1990 Education for All (EFA), the Dakar Framework for Action 2000, and later on the Incheon 2015 on World Education Agenda 2030. Education programmes are established to increase enrolment and completion rates, manage the capacity building and improve basic education provision. To achieve this, the government decentralised and restructured the provision of primary and secondary education systems (URT, 2017, 2018b).

The decentralisation and structuring of the education system in Tanzania have been implicitly aligned with Fayol's 14 principles of 1+7+4+2+3⁺. The inauguration of

ETP in 2014 has positioned education functioning and the division of labour at the apex of the structure within the President's Office Regional Administration and Local Government (PO-RALG), Ministry of Education, Science and Technology (MoEST), Wards and Schools at the bottom. In 2009, the management of the primary and secondary education sub-sector was transferred from MoEST to PO-RALG through Government Notice No. 494 of 2010 (eGA, 2012; URT, 2018a). The government states that MoEST shall delegate its responsibilities of managing primary and secondary schools to Local Government Authorities. In addition, MoEST promised to continue to focus on developing policy, planning, and tracking (The United Republic of Tanzania, 2010; URT, 2010).

The government broadened community participation and accountability in running and managing schools at Local Government Authorities such as wards, councils, and regions to enhance the management and enrolment of children in schools. Schools will partner with the communities to achieve societal participation by forming committees or boards to incorporate with community stakeholders to strengthen school management purposively. Stakeholders from within and outside the school should have the power to understand and watch the responsibilities of other staff in a school and their specific functions (Adam, 2018; McNamara, 2009; Sharma and Shakir, 2019). The education policy delineated and circumscribed the responsibilities of various stakeholders and offices throughout the education system and simultaneously placed responsibility and authority on school heads and board/committee members. The Education Act states the duties and functions of different stakeholders, unlike the Education and Training Policies of 1995 and 2014 (URT, 1995, 2018a, 2018b), which had been assisting and directing the school's decentralised governance and eliminated the bureaucracy chain and the need to legitimise school decisions and actions from the central government.

Fayol's principles in the context of school administration procedures in Tanzania

The administrative roles of the school system in Tanzania are hierarchically structured around different planning functions. In this hierarchical structure, the division of labour represents the articulation of staff in various units within the school system for their authority and responsibilities (Figure 1). This division presupposes ensuring work efficiency and rationalised training costs (URT, 2018b, 2018a). Different tasks are broken down into many simple tasks in a school system to help school heads work better with a more or less similar effort. This breakdown of tasks implies that the managerial position and roles of school heads and other administrative

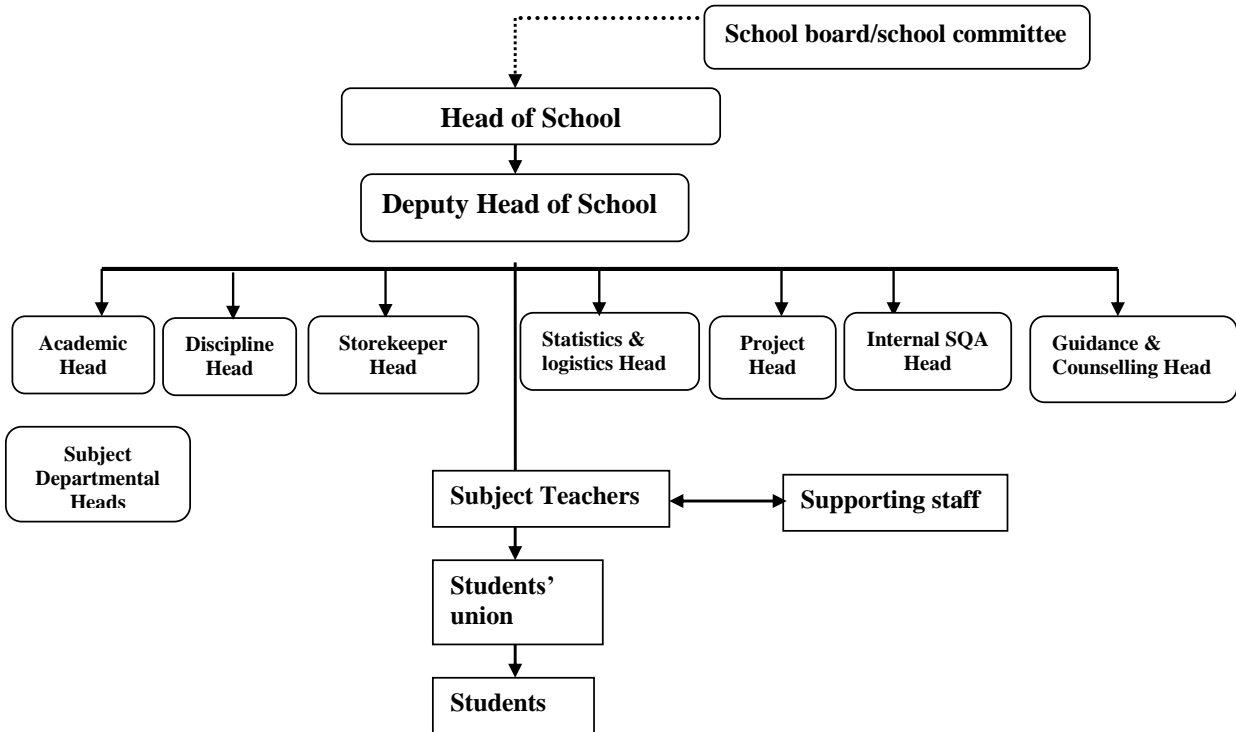


Figure 1. The Tanzania structure of school administration by Fayol's principles. Source: Authors' conceptualisation of Tanzania educational policies and other government documents on the administration of secondary schools.

functions have been structured to mingle the roles enshrined in the decentralised planning of the primary and secondary education sub-sector.

In the primary and secondary education sub-sector, Decentralisation by Devolution (D by D) has been conducted in management, administration, planning, and supervision to increase efficiency and responsiveness in operating schools.

This type of decentralisation was to give broader authority and responsibilities to lower levels of management (The United Republic of Tanzania, 2010; URT, 2018b). The D by D delineates the line of demarcation of the roles at different levels and actors in the decentralised structure at primary and secondary schools. Various directives and guidelines document the functions and responsibilities of each person at school. For example, starting D by D empowers school heads to work with school boards or committees.

In working closely with school boards, the school heads are advised to focus on preparing and starting the Whole School Development Plan (WSDP). WSDP intends to approve the school spending and manage school funds for efficient use for school development. Other tasks are ensuring each school has a safe and conducive learning environment for diverse learners and providing guidance and counselling services in schools. In addition, school heads have other roles in supervising compulsory

enrolment and tracking school attendance for all pupils, including those with special needs. The school heads must sensitise and organise the community to solicit resources for school development and motivate and maintain teachers' and pupils' discipline.

Decentralisation by Devolution (D and D) has enabled the school heads in the management process. Similarly, school boards/committees are mandated to manage and organise school resources without being interfered with by the top authorities at the ministerial level. The interactive planning model is usually more flexible, fluid, and unrigged, giving school heads and board/committee members unlimited freedom to explore the values, multiple views, and opinions of the community members who manage school resources. About disciplines in the chain of authorities, the decentralisation and structuring of education institutions (schools) have reinforced individual workers' behaviour as subjects of natural human tendencies to lawlessness, thus ensuring smooth leadership, fair agreements, and rationally enforced penalties in school organisation (Galabawa, 2001).

In recent years, obedience and respect of teachers and supporting staff to their superiors and dress code have been improved by training school heads and representative teachers on management-related courses offered by the agency responsible for developing educational management staff (Malekela, 2004). Also,

discipline has been created through government directives of appraising job performance, while punishment is used only to correct workers for ignorance of rules and regulations. For example, Teachers who display repugnant behaviour are made to appear before a disciplinary committee as strategies to enforce rules and regulations stipulated in Teacher Service Commission No II of 1995 (Namamba and Rao, 2017; URT, 2017).

The match between Fayol's principles and the structure of education in Tanzania

The structuring of schools in Tanzania has strengthened the unity of command, one of Fayol's principles that ensures a subordinate receives orders from only one superior, as pictured in Figure 1. However, educational officers at regional, district, ward, and school levels sometimes receive orders from other ministries beyond education, such as Public Service Management and the Ministry of Finance. And during the mayhem of Covid-19, the Ministry of Health had orders which went down to schools (Manyengo, 2021; Tarimo and Wu, 2020); Sometimes, effectively implementing orders, rules and regulations, often from superiors, can be detrimental. These multifaceted orders tell a lot about the lack of specific unity of command from one superior is likely to bypass the formal chain of command. Skipping the legal chain of command might cause imperfect departmentalisation, the intermeshing of functions, and vaguely acting on defined activities (Araújo et al., 2014; Gupta, 2022). From a management perspective, receiving a command from a single unity for the educational officers enhances subordinate effectiveness. It reduces the possibility of serving undefined tasks from multiple bosses which do not match the primary job descriptions.

Likewise, unity of direction ensures consistency of educational leaders to direct a particular individual or group of individuals to carry out tasks having similar goals towards the specified vision and mission of the school organisation (Galabawa, 2001; Mbalamula et al., 2017; Yeganegi and Zadeh, 2020). The unity of direction emphasises order in pursuing specific goals and plans. The school system in Tanzania has maintained the consistency of ensuring unity of direction that empowers a head of school to ensure explicit coordination of tasks in the school. Likewise, the structuring of school organisations has reduced division in the subordination of individual and general interests. In the current structuring of schools, the emphasis is on channelling the subordinates' interests and efforts to realise the school goals, vision, mission, and plan implementation. Practically, school staff (teachers) create personal interests over those of the school as a stepping stone to their success. Most teachers have been mournful and unhappy with the poor pay, absence of work incentives,

and promotions that have existed for years (Eshun and Mensah, 2013; Lawrent, 2019; OCDE, 2009).

But decentralisation of school decisions is placed in the hands of Ward Education Officers, School Committees/Boards, and Heads of Schools. School Committees will make rational decisions by setting plans and strategies for the success of their schools. The decentralisation of decision-making to the school level helps to increase community participation in the school projects established and accomplished by the community (Rosenblatt, 2001; Suru, 2022). Under the D by D, in primary and secondary schools, the communication flow from the head of school to students is promising. However, schools receive orders and directives from two Ministries responsible for Education (URT, 2018b, 2018a).

Applying for orders, as one of Fayol's principles in the school system in Tanzania, is commonly practised through government circulars and directives. The schools have an instructional timetable and specific days for classroom instruction prescribed by the government circular No 2 of 2012. The circular states that classroom instruction should not be less than 194 days a year. In addition, students, teachers, and non-academic staff should obey orders from the top authorities, such as observing dress codes as stipulated in government directives No. 14 of 2011. But the National Audit Office of Tanzania is responsible for visiting schools to track the efficient use of funds disbursed and observe materials purchased in schools if they cater for value for money. Regular auditing has raised the responsiveness of school administrators to ensure all physical materials and financial statements are kept orderly to avoid audit queries. Despite regular auditing in schools, audit queries are still rampantly calling for educational authorities to insist schools adhere to financial regulations and procurement procedures (The United Republic of Tanzania, 2010).

The government is urging workers' commitment and loyalty to their work. Similarly, department heads and institutions treat their subordinates and the larger community regardless of religion, class, or tribal affiliations. Fair treatment reduces chaos and misunderstanding among the staff, the community, and authorities. The existence of fairness reveals the application of Fayol's equity principle applicable in both public and private institutions (schools) through maintaining the democratic style of management, sharing staff feelings, and showing cordial relations among the staff, school, and community.

Contextualizing Fayol's principles in the management of teachers' welfare

The education sector explicitly recognises the importance of teachers and support staff in realising educational goals (Martínez-Bello et al., 2020; URT, 2018b; Viennet

and Pont, 2017), despite variation in working conditions between rural and urban teachers in the African context (Lawrent, 2019). Although there is variation among teachers due to localities and conditional status, teachers serving in public schools become permanent employees and reach compulsory retirement at 60 years. But teachers and supporting staff in non-government schools are used on a contract basis ranging from 2-5 years. The contracts are renewed based on the teacher's performance and commitment. The public and private sectors are taking several initiatives to motivate and maintain the security of workers and their families by providing them with working facilities, transport, accommodation, health insurance, and contributions to social security funds. However, these incentives vary from one institution to another upon the availability of resources and facilities. The proper motivation of teachers helps strengthen working morale and increase productivity, including providing quality education in schools.

However, providing quality education in the country is challenged by a shortage of incentives to workers, facilities, and on-job training to boost teachers' work morale. The government took various initiatives to improve performance among the staff through training and the provision of facilities. Some in-service training for teachers has been recently conducted, such as management of 3Rs, school leadership and management, and internal school quality assurance, to mention a few. This training encouraged school administrators to develop plans and proposals to seek resources from various development partners to help their schools. The activities done by some schools from the funds secured from different sources include the rehabilitation of school infrastructures, introducing the school feeding programme, and buying of school facilities. However, many school administrators do not reflect these initiatives because of careless and unrelated commitments. Henri Fayol said that school managers or administrators should have tangible initiatives that describe their commitment to realising school goals (Godwin et al., 2017; Shakir, 2014; Sharma and Shakir, 2019).

The Fayol principle of Spirit de Corps is the central premise of the government's commitment to realising educational goals and national vision for 2025. The principle of Espirit de Corps exhibited by education leaders from the region to the school level inspires enthusiasm, dedication, and strong regard for honouring teachers working in challenging environments across the country, showing spirit and obtainable teamwork (Hatchuel and Segrestin, 2020; Schachter, 2016). The teamwork in the Tanzania education system exemplifies how Fayol's successfully postulated those principles that embrace the administration of various organisations, including the school system. For example, the success of the Espirit de Corps principle is determined by the level of dedication and cooperation (team spirit) among the staff

and their leaders to achieve the school's pre-determined goals in Tanzania.

Conclusion

This paper argued that Fayol's 14 principles had outlived the era of theorising and survived turbulent academic criticisms. The principles have eventually influenced fundamental practical implications in organisations' management and administration, including educational institutions. Arguably, many of Fayol's principles are still relevant and applicable today, as in 1916 during the heyday of organisational and industrial development. The meta-analysis in this discourse revealed that Henry Fayol's principles had distanced themselves from rigidity and inflexibility, which means they are flexible enough to accommodate the current changes, context, and technology.

Fayol's 14 principles work better in a decentralised schooling system than in centralised authorities and procedures. Hypothetically, the structure of the organisations, like schools, reflects the age of its foundation, where it grew and changed with time to the recent period. Explicitly or implicitly, there is a high correlation in the usability of Fayol's 14 principles in Tanzania's schooling systems regarding the devolution by decentralising the management of primary and secondary education to the local level context. As revealed in schools, the management functions of forecasting, planning, organising, commanding, coordinating, and controlling depict the administrative principles of Fayol.

The management activities described in the decentralised hierarchical structure of Tanzania's primary and secondary education sub-sector from 2006-2015 are linked with Fayol's 14 administrative principles. The Fayols' principles are reflected by management functions and hierarchical activities such as technical, commercial, security, accounting, financial, and managerial. The similarity of Fayols' principles and administrative structure of education sector is shown in delivering educational services from the ministerial (macro) level to the community (micro) level. The 14 administrative principles postulated by Fayol raise prime concern in schools to change their management systems to bring the desired results.

RECOMMENDATIONS FOR FUTURE RESEARCH

Although several studies have been carried out regarding Fayol's postulates, we recommend further studies to explore the current management of the education sector at different levels of schooling. Of particular interest is examining Fayol's principles about managers' favourability or discrimination. Another study can be conducted about

the compatibility of Fayol's principles on educational administration. In addition, future research can enlighten teachers to understand the fourteen principles dominantly used in their schools by school heads and how these dominant principles fit into school improvement in the quality versus equity variables.

CONFLICT OF INTERESTS

The authors have not declared any conflicts of interests.

REFERENCES

- Adam AK (2018). A Contextual Framework of Henry Fayol's 14 Principles of Management for Public Sector Efficiency and Effectiveness of Policy Responsibilities by a Government Management, Administration, Secretaryship, Human Resource Management and Good Governance View pro. *Journal of Advanced Research in Business and Management Studies* 11(1):46-61.
- Araújo DR, Sampaio FMC, Castro MC, Pinheiro SAV, Macedo AP (2014). Testing in time: from the classical management theory to the current organisation of Nursing work Test. *Revista de Enfermagem Referencia* 4(2):111-120.
- Bush T, Creighton T, Dembowski F, Echols C, Glass T, Hoyle J, Kelehear Z (2012). *Educational Administration: The Roles of Leadership and Management* pp. 1-58.
- Cardno C (2018). Policy Document Analysis : A Practical Educational Leadership Tool and a Qualitative Research Method 24(4):623-640.
- Donnelly DG (1966). The basic theoretical contribution of Chester I . Barnard to contemporary administrative thought. February 245.
- eGA (2012). e-Government Agency Strategic Plan 2012/2013. July 2012.
- Eshun I, Mensah MF (2013). *Journal of Education and Practice* www.iiste.org ISSN 4(4).
- Galabawa JCJ (2001). Perspectives in educational management and administration. HR Consult.
- Godwin A, Handsome OE, Ayomide WA, Enobong AE, Johnson FO (2017). Application of the Henri Fayol Principles of Management in Startup Organizations. *IOSR Journal of Business and Management* 19(10):78-85.
- Guo Z, Chang YC (2023). Conceptual research of college students' boredom, learning attitude, academic achievement and behaviour *Educational Research and Reviews* 18(4):63-72.
- Gupta C (2022). *Management Theory and Practice*. Sultan Chand & Sons.
- Hatchuel A, Segrestin B (2020). A century old and still visionary : Fayol's innovative theory of management. *European Management Review* 16(2):399-412.
- Hersey P, Blanchard KH, Johnson DE (2007). *Management of Organisational Behavior* (9th ed.). Pearson Prentice Hall.
- Lawrent G (2019). Teachers' multiple roles and perceived loss of professionalism in Tanzanian secondary schools. *Waikato Journal of Education* 24(1):11-19.
- Leithwood K (2021). A review of evidence about equitable school leadership. *Education Sciences* 11(8).
- Mahoney JT (2002). the Relevance of Chester I. Barnard's Teachings To Contemporary Management Education: Communicating the Aesthetics of Management. *International Journal Organization Theory and Behavior* 5(1-2):159-172.
- Manyengo PR (2021). Digitalisation in teaching and education in the context of COVID-19: United Republic of Tanzania. Background Report pp. 1-14.
- Martínez-Bello V, Martínez-Rojas Á, Lahuerta-Contell S (2020). A Critical Analysis of the Explicit and Implicit Treatment of Human Rights Education in Early Childhood Education Textbooks. In *Frontiers in Education* 5:565139. Frontiers Media SA.
- Mbalamula YS, Suru MH, Seni AJ (2017). Utility of Henri Fayol's Fourteen Principles in the Administration Process of Secondary Schools in Tanzania. *International Journal of Education and Research* 5(6):103-116.
- McNamara DE (2009). From Fayols Mechanistic To Today's Organic Functions of Management. *American Journal of Business Education* 2(1):63-78.
- Mehta A, Yadav V (2014). Henry Fayol and Frederick W. Taylor's Contribution to Management. *International Journal of Innovative Research in Technology* 1(5):807-810.
- Morgan H (2022). Conducting a Qualitative Document Analysis. *Qualitative report* 27(1):64-77.
- Muldoon J, Liguori EW, Bendickson J, Bauman A (2018). Revisiting perspectives on George Homans: correcting misconceptions. *Journal of Management History* 24(1):57-75.
- Namamba A, Rao C (2017). Preparation and professional development of teacher educators in Tanzania: Current practices and prospects. *Journal of Education and Practice* 8(8):136-145.
- OCDE (2009). The professional development of teachers. In *OECD Observer* (Issue 211).
- Rosenblatt Z (2001). Teachers' multiple roles and skill flexibility: Effects on work attitudes. *Educational Administration Quarterly* 37(5):684-708.
- Schachter L (2016). Frederick Winslow Taylor, Henry Hallowsell Farquhar, and the dilemma of relating management education to organisational practice. *Journal of Management History* 22(2):199-213
- Shakir M (2014). Using Henry Fayol's Principles for Better Classroom Management 4(11):72-78.
- Sharma S, Shakir M (2019). A Study of Academic Anxiety of Senior Secondary School Students in Relation to Locale and Type of School. *Research and Reflections on Education* 17(4):1-9.
- Suru MH (2022). Teachers' Management of Pre-Primary School Children Learning: Reading Arithmetic Skills Through Visual Media. In A. P. Almeida, & S. Esteves (Ed.), *Modern Reading Practices and Collaboration Between Schools, Family, and Community* 1:53-80.
- Suru MH, Mwampulo SH (2021). Management of Sources of Stress: Effects and Coping Strategies by Teachers to Improve Human Resources for the Industrialization Process in Tanzania. In: A. Makulilo, F. Nafukho (Eds.), *Handbook of Research on Nurturing Industrial Economy for Africa's Development* 1:122-150.
- Tarimo CS, Wu J (2020). The first confirmed case of COVID-19 in Tanzania: Recommendations based on lesson learned from China. *Tropical Medicine and Health* 48(1):1-3.
- The United Republic of Tanzania (2010). *Education Sector Development Programme: Secondary Education Development Programme II* (July 2010 – June 2015). July 2010, 94.
- United Republic of Tanzania (URT) (1995). *Ministry of Education and Vocation Training: Policy of Education*. Ministry of Education.
- United Republic of Tanzania (URT) (2010). *First Review Under the Policy Support Instrument and Request for Modification of Assessment Criteria — Staff Report; Press Release on the International Monetary Fund First Review Under the Policy Support Instrument Prepared*. Crisis 10 p.
- United Republic of Tanzania (URT) (2017). *National Framework for Continuous Professional Development for Practising Teachers* P 22.
- United Republic of Tanzania (URT) (2018a). *Education Sector Development Plan*. Ministry of Education, Science and Technology P 246.
- United Republic of Tanzania (URT) (2018b). *Education sector development plan (2016/17-2020/21)*. Ministry of Education, Science and Technology P 246.
- Uzuegbu CP, Nnadozie CO (2015). Henry Fayol's 14 Principles of Management: Implications for Libraries and Information Centres. *Journal of Information Science Theory and Practice* 3(2):58-72.
- Viennet R, Pont B (2017). *OECD Education Working Papers* 162:63.
- Wren DA, Bedeian AG, Breeze JD (2002). The foundations of Henri Fayol's administrative theory. *Management Decision* 40(9):906-918.
- Yeganegi K, Zadeh AM (2020). A Review of New Leadership Theories and Its Components. *SSRN Electronic Journal* 12 p.

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