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Sustainable Development Learning in Higher Education Institutions: Intensions and Tensions in Pakistan

Abstract:

To ensure a better world, for the coming generation, sustainable development agenda was set in 2015 to 2030 for world community. The agenda need countries to make a national framework and interconnect with the major stakeholders, being higher education, universities have to play important role for implementation of sustainable development. The article describes the discussion by analyzing the document of the government of Pakistan, and co-relate with the theory of endogenous growth. It is also evaluated government intension of policy towards universities engagement for creating an enabling environment for core competiveness for the student to develop and precisely the learning outcome vis-à-vis, the higher education students' perception of the knowledge, awareness and learning outcome and practices. For this, article uses the interactive research approach by conducting survey from the universities of multi-disciplinary mostly social sciences, using an interactive research approach, in order to ascertain and understand tension of the student, state of awareness, knowledge and pertaining of sustainable development. At the end it has been analyzed and discussed in the context of intension and tensions on the concept of and themes of the sustainable development and co-relating with producing the human capital in knowledge economy.

Key Words: Sustainable Development, Higher Education Institutions, Economic Growth

Introduction:
Pakistan is signatory and committed to SDG agenda 2030 since its commencement, in 2015. Pakistan has made its national agenda on development as adopted by National Assembly Resolution to localize the implementation (UNDP, 2019) of SDG and to make indicators for reporting. It was step further from Pakistan experience and learning of Millennium Development Goals, where consultation on goals nationwide helped developing Pakistan national perspective on Developmental goals and identified priorities. This experiences further boosted Pakistan's firm commitments towards SDGs. Pakistan has priorities its developmental planning in 12th Five Years Plan 2018-2023 (Ministry of Planning, 2020) as well as Medium term development plan is allied with SDGs-2020 agenda.

Further, National Initiatives to implement   SDGs were taken and Support Units for SDG have created under Ministry of Planning and Development to create an enabling atmosphere in order to get SDGs implemented. These units are working on reforms to align with SDGs at federal and provincial level (GOP, 2020).To deal with the macro-economic framework of Pakistan and its aligned goals of SDG, it needs multipronged strategies for implementation of SDGs for development of Pakistan. SDGs many goals itself deals with the education, gender equality and quality of education. However overall, the awareness of the SDGs goals, its purpose of attainment requires the attention of policy makers on the one side for policy intervention to get the behavior change of the citizens, for being a sustainable society but also youth and students of the universities, who can make a different by not only understanding, dissemination the intent of the SDGs but as future implementers also. The capacity of faculty is also required to develop a cross-cutting competence on sustainability, to contribute in the concept awareness, bringing change in cognitive learning and behavioral changes through knowledge outcomes. SDGs

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education perspective and learning in higher education will be a contribution in attaining the core of the SDGs by equipping the youth of the universities with the SDGs core learning, practicing and becoming part of the overall planning of the government to transform society for augmentation of Sustainable development in Pakistan. Keeping this in view, this paper looks at the higher education institutions role in promoting the SDGs, making learn to the youth, and embedding core values of the Sustainable development concept in the main values of the cognitive learning and practice in higher education institutions.

Since agenda 2030 though formed for all nations and citizens, but its targets is also to make it localized by every country through their endogenous approaches and strategies. Therefore, this paper will also shed light on the government initiative and how they being carried out by the institutional setup and how the awareness is being given in Higher Education communities of Pakistan so far.

Research Framework:

A quantitative method of research is employed in this paper to look at the awareness and capacity of the faculty of higher education to develop, train and get the outcome intended as per national plan for the sustainable development and SDGs. A small survey has been conducted from four local Pakistani universities of Higher Education of different discipline to know the basic level of awareness and faculty capacity in student's perspective of learning outcome and implementation of sustainability strategies vis-à-vis the measures at the institutions of higher education. Nevertheless, the awareness of concept of sustainability and implementation of SDGs vis-à-vis education cannot be restricted to simple contents of the curricula, but in this context, it is more of implementation of a framework of Sustainability by transforming the society socially, politically, and economically. The survey research will be analyzed in the analytical part to know the state of current level of sustainability awareness in the higher education students. The special feature of the developmental goals is that it has to be adopted by local Initiatives of the respective countries such as education policy for sustainability.

In this perspective, this paper will co-relate the education of youth in higher education, their capacitation with the overall strategy of the country of building social capital by adaptation Sustainable economic growth. Therefore, for the theory to relate the human resource with the overall economic growth, the economic theory of Endogenous growth will be linked. The endogenous growth model appeared in 1980s, to present the cause and origin of economic development, as previously the neo-classical economic model has a vacuum in such explanation. Endogenous growth theory assumes that an exogenous factor does affect the growth but the primary determinants of development are endogenous. They major focus in endogenous growth strategy is on human capital, technological advancement and state investment on research and development and education. The leading economist of the endogenous growth theory is Paul Romer who presented theory in 1990 with the focus on endogenous technological development and change. It was further based on the assumption that when there will be increase the investment, it will increase return and scale of the economy. Learning is the central element of the indigenous growth they and learning by doing is what the universities and the firm has to do according to this model. This model considers knowledge as a capital good to increase productivity. The assumption of this theory has kept in mind while quantitative data collection (Romer, 1990).

Government's policy Intensions and Issues

The pertinent question is how universities can play their role that sustainable development can be converted into action? Brandli, & Frandoloso in 2011 have defined to fundamental roles of higher education in order to get agendas of sustainability implemented. First "to ensure that the educational subject prepares individuals to be more involved in decision-making concerning environmental issues in the future and second, to ensure that the implementation of environmental management systems presents models and practical examples of sustainable management for all society" (Brandli, 2011).

Specifically if we look at the role, generally about education, documents and policy framework of SDGs of Ministry of Planning and Development and Reforms, have talked comprehensively, however was not found intension particularly. Therefore, upon the authors further investigations and coordination with the Support Unit, Islamabad for any particularly documents in this regards, Mr. Shahid Naeem, who is the Chief of Sustainable Development Goals, programs and working heading the Support unit, SDG Islamabad, working closely with Ministry of Planning and Development and Ministry of Climate Change, has mentioned that a policy draft has

been finalized and yet it has to disseminated and shared with the rest of the support Units in Provinces and Jammu and Kashmir, and the universities. The policy intension in the proposed policy deals with the following issues particularly regarding the sustainable development and partnership with universities and how they can contribute and engage themselves with the government to attain the sustainable society. The policy intends that harnessing universities is important for achieving the 2030 agenda. It is further intended that "by adopting sustainable practices in their organizations, campuses and within their governance structure. Of the 250 university campuses in Pakistan, some are already taking lead in implementing SDGs (e.g. NUST Islamabad is a participant of new ranking of the Times Higher Education (THE), UK" (Naeem, 2020). To mainstream sustainability research agenda of the university must be linked with the concept. Government plans to "each district offers a ground for research on each of the SDGs indicators…Graded academic work such as term papers, essays, thesis, fieldwork and assignments can be focused on some of the SDGs and how they can be achieved in the local context. HEC may organize annual competitions to document the best practices and share such knowledge with wider communities" (Naeem, 2020).

The policy also intends to bring a behavioral shift in the society through the paradigm shift. "Universities can play a critical role by involving the energetic human resource and research capacity". It is also realized that today's students in in higher education will be part of the policy making in future. "Therefore, it is necessary to leverage this resource, upscale it and use for innovative solutions for the problems at the grass roots that can help the country to achieve the SDGs" (GOP, 2020).
It is also realized that some of the universities have weak structure they can be offered courses from good universities from outside Pakistan or within Pakistan for building capacity of not only students but of the faculty also and "the joint selection of topics, joint research teams and joint evaluation of research. Similarly, universities can help various government institutions extend their outreach expand the network through the students in creating awareness on sustainable agriculture practices". UNISEF above has given guidelines how to engage universities; Pakistan policy also intends to collaborate universities "with local chambers of commerce, financial institutions, Employers' and Workers' Federations, Pakistan Business Councils and social sector organizations, short term internships will be arranged for the students. If needed, separate MoUs can be signed with these organizations to allow regular placement of university students in the relevant organizations"(Commission on Science, 2018).

Regarding the learning by doing, learning outcomes and sustainable practice in the university, the policy intends to promote "a culture of recycle in the universities. Universities may develop indigenous innovative solutions to use the waste including water, and become "zero waste" organizations. University students may be encouraged to participate in Clean and Green Pakistan initiative and Billion Tree Tsunami campaign". The leading university NUST in Islamabad, student derived campaign of plastic free and water conservation at the campus to create awareness of sustainable society concept of sustainable resources use. Ministry of Planning's, concept paper clearly devises a policy to engage the Higher Education Commission for the purpose of networking, coordination and capacity building with all educational stakeholders (NUST, 2020).

Funding for the research and program is the vital part of the policy implementation; therefore, policy has described the role of the Higher education commission to align research grants to SDGs. "International agencies would be asked to support research projects that will help in achieving SDGs in Pakistan. Similarly, some international universities are also willing to lend their hand in capacity building of Pakistani universities" (Noor, 2020).

Analysis: Intension vis-a-vis Tensions of Learning at Higher Education.

The policy can be evaluated against some of the framework and broader guidelines for the role of the universities by the UNICEF as a specialized agency of the United Nations on Education. However it is not for a specific country or state, just a guideline of key competencies that state policy intervention in universities; which can bring positive result to achieve sustainable development. The Planning and Development and Reforms Division concept which is highlighted above testifies the comprehensive approach of dealing and making the higher education a stakeholder in achieving the sustainable development through the indigenous growth model. It emphasized on taping the local resources of Human resource, quality education and learning by coordination from some of the more developed universities in the country, however of course international collaboration will add more value to the efforts of the government of Pakistan, which is also intended in the Plan while engagement will be actualized with the universities (Commission on Science, 2020).

Though, the plan is not yet implemented with a holistic approach, but since the Global Agenda of sustainable development was set in 2015 for 2030. Being signatory , Pakistan has done legislation for implementation of 17 goals with performing indicators, so now 5 years have already gone of the implementation period and the universities have also already in some contribution through some of the contents of curriculum for transformational education. We cannot see any collaborative and specific following the road map for attaining the global agenda so for , however Universities are making their efforts individually and urging government for collective efforts to create university engagement through teaching and research for the learning outcome. Some of the universities are taking lead in creating awareness in the students and civil society about the sustainable development and making the SDGS as priority areas of the research. The COMSATS, university, Islamabad has convened a seminar on "Sustainable Development Goals – The Role of Universities," (UNDP, 2010) to generate cross sectoral debate on the sustainable development with academic perspective. After the success of this seminar, they convened another follow-up meeting at bigger level to engage other universities and share the thought on "SDGs Implementation: The Collaboration among Universities" (UNDP.2019) which provided a brainstorming opportunity to participant of other universities.

Another big public sector university in Islamabad, National University on Science and Technology, has aligned it research and publications with the SDGs agenda and increased its Impact ranking 2019 (Commission on Science, 2020). The research publication individually by researchers are being published also on SDGs as mentioned in the literature review, however it is not yet contributing in the policy formulation and action plan development further by the government policy. These are universities mostly based on the natural science discipline; therefore lead was taken by them. Nevertheless, rest of the public and private universities are participating in sustainable practices, generating debates on SDGs and holding seminars and some of the sustainable practices are being followed such as paper free environment, clean campus campaign , green campus and tree planation, optimum use of printing paper, and universities are directed to use both side of the paper for printing purposes , during COVID-19 universities as per the directions of the Higher Education Commission has developed distance learning system and shifted to Google Class, which is also a step towards using resources sustainably. However, not as a holistic approach being to attain the goal of sustainable development (GOP, 2020).

Keeping in view the universities particularly the Science and Technology universities efforts of mainstreaming the themes of SDGs and to identify the gaps between policy perspective , implementation and student perspective regarding the concept of transformational education, learning outcome, awareness of the themes, pedagogy for endogenous innovation and learning by doing commitment,   to achieve Sustainable development, is based on a small survey from the university students of Master and M.Phil of multidiscipline. However, it is to be mentioned that this survey was originally not by design but evolved the need during the research to know the student perspective for the analysis and what are their tension vis-à-vis state plan of intensions for the engagement of the university and also to know what are the state of understanding at this point of time regarding sustainable development (Ministry of Planning, 2020).

Methodology of Survey: An Iterative analysis method has been applied to carry out systematic analysis of qualitative data collective from respondents. In-order to include information-rich participants in the study as Iterative approach suggests, under non-probability sampling the purposive/convenient sampling technique has been used:
Total Number of Universities: 10 Five from Public and Five from Private Sector (4 from capital territory and 1 from each province, 1 from AJK and 1 from (GB)
Total Number of respondents: 60
Main Questions asked to seek the understanding:
1   Education as a means to achieve sustainable development is not a new idea, do you have understanding of Education about Sustainable Development for transforming the world keeping this in view:
2   Is it often the University curriculum referrers to Sustainable Development? Or are you motivated for the research on this area?
3   How much awareness is given to students' vis-à-vis inter-disciplinary approach of the education and sustainable development?
4   Do you think that university Industry-Academia should be coordinated or you have example of university of this collaboration.

5   In your opinion Higher Education commission has adequately imparted in Faculty, trainers for their capacity regarding Sustainable Development competence such broadly terms and concept like Climate change Responsible production and Responsible Bio-diversity, water and energy conservation and:

6   knowledge about the state of the planet, wise decision- making, modeling sustainable behavior and transformative social change:
   a.   the ability to understand and reflect on the norms and values that underlie sustainability values, principles, goals and targets, in a context of conflicts of interests and trade-offs,
   b.   the ability to collectively develop and implement innovative actions that further sustainability at the local level and : the ability to learn from others;

Four Points Base for Analysis:
1.   **Information**: Generic concepts
2.   **Knowledge:** knowledge is the relevant information that helps in drawing conclusions
3.   **Awareness**: pedagogy, understanding of application of knowledge obtained from the education or experience
4.   **Applicability**: Practical exposure and learning by doing.
Based on the above four base points, following is the result in tabulation form:
Tabulation Presentation of Recorded Responses on Sustainable Development and Higher Education

Categorization of Institutions	Information	Knowledge	Awareness	Applicability
Respondents from Public Universities[iii]	99%	67%	39%	9%
Respondents from Private Universities[iv]	100%	77%	41%	11%

The survey was conducted to seek the level of capacity and starting point of the student, result reveals that students with huge percentage are not equipped properly with the basic concept of the sustainable development and 39% of them are just aware and have scarce information. This reflects that required time and energy is not spent on the sustainable development goals in their academic activities and less bureaucratic structure of governance is followed. However an encouraging element is the still the response of the private universities, where the research projects are align with the international funding also, has bit better situation, and score of awareness , knowledge and information is better than the public sector university. However the score of applicability or learning by doing or practicing is very low and not encouraging keeping in view the present challenges of the knowledge economy and endogenous economic model.

The applicability is very much intertwined with the competencies such as skill, knowledge and attitude towards adopting the sustainable living. Fundamentally it should be based on the university curricula, integrated with the university overall environment related to degree and also making a concerned citizen and professional to place themselves in the challenges of the knowledge economy. Critical thinking is another competence can lead them to discern the consequences as discussed by Sánchez-Martín (Sánchez-Martín, 2017).

This surveys validates our concerns and gap between the government intensions of the higher education engagement and making stakeholder for sustainability and lack of student understanding of the concept and knowledge of sustainable development , learning by doing and practices at campus.
Implications and Recommendations
For the purpose of the universities to be receptive there is need of developing competencies to learn and practices the sustainability education otherwise if it is not infused in student and made part of the curriculum, it will result into failure of national agenda and framework which is devised to align it with the global agenda of Development -2030. It will be failure of knowledge economy and ultimately the unsuccessful attempt of developing endogens growth model. The literature suggests that these competences can be developed "through transversal development in all subjects…transversal development is a good option to work these competences" (Ministry Of Planning, 2020). This method is also proposed by the UNESCO. This method permits adaptation according to the student requirement not create a separate hub of knowledge for burden of course on sustainability but already existing courses must permeate the theme of sustainability, but the themes and learning outcome should embedded in , in

all courses and specialization could be offered to the university in the starting semester. As it is a cross-cutting theme. At the same time, for a professor to devote time specifically sustainable development project will not be possible in addition to the other teaching and research burden, therefore, the University Impact Ranking as suggested by the government intension would be highly recommended. It will be an evaluation of university commitment towards sustainability. On a macro level, there much need to be done for the promotion of sustainable development. The Performance indicators are to be developed for evaluation, how much higher education has been affective in the sustainable development. Some of the student can be quite capable and motivated and they go for self-education, but they cannot streamline their energies towards national agenda of sustainability till the time a formal system is available in the higher education.

Keeping in view the above survey it is recommended to address the tension of the students, whole curriculum be revisited keeping in view demand of sustainable development competences.

There is also need to plan for teacher learning itself and their capacity building, as the knowledge economy, technological innovation, optimum use of resources, water and energy conversation and ecological diversity etc, may be easy to make understand for few sciences department, but for the social science such political science, public policy, sociology and history, the faculty might need certain level of training. Data shows that student cannot make them relevant as a concerned citizen with national framework of development, if through pedagogical manifestation can transform the behavior in youth, it will result in learning outcome of behavioral change and sensitivity towards sustainable development (Francisco, 2016).

Conclusion:

This paper has provided an orientation on significance of sustainability education and awareness at higher education institutions in Pakistan. It has articulated the government policy documents, their intension towards engaging the higher education for achieving the global agenda. It has also looked the policy in the theoretical perspective of the growth model i.e. indigenous growth model and linked with the government policy and achieving the sustainable society. It is link the relationship between government intension and students tensions that is there at the current state of policy and students. A research survey has been conducted that shows serious questions regarding sustainability policy, in Pakistan. This paper highlights the government of Pakistan preparedness and also intension specifically to address the issue of sustainable development vis-à-vis university engagement which is yet not implemented; it is still available with Ministry of Planning a Development and Reforms as a concept note. Together Intension and tension give an insight which leads to the conclusion that there is a wide gap between the policies envisage by the sustainable framework for national development agenda and the core stakeholder of higher education. Generally student does not get much information from the formal system and not very clear about Sustainable development terminology, and the information they have is quite scarce. This draws our attention that it does not have to be taken over simplistically; individual efforts through pedagogies are not enough.It is recommended above that there is a need of building necessary capacities, through embedding the concept in all subjects for expected learning outcome and for competence based and transformative education. The Higher Education of Pakistan,(HEC) has critical role in creating enabling environment for learning and pedagogy through facilitation of HEC to faculty members.

REFERENCES

Brandli, L.; Frandoloso, M.; Tauchen, J. Improving the Environmental Work at University of Passo Fundo,Brazil-Towards an Environmental Management System. Braz. J. Oper. Prod. Manag. 2011, 8, 31–54

Commission on Science and Technology for Sustainable Development in the South, COMSATS University Islamabad, July 19, 2018 http://comsats.org/?ai1ec_event=seminar-on-sustainable-development-goals-role-of-universities-islamabad-pakistan (accessed November 14, 2020)

Francisco Zamora Polo, Jesus Sanchez Martin, Francisco Hipolito Ojalvo. "Using Moral Dilemma for Ethical Skills Development in Engineering Degrees. Application To Mechanical Engineering,". *DYNA* 91, no. 5 (2016). DOI: https://doi.org/10.6036/7822

GOP, *National Initiative for SDGs* Government of Pakistan, 2020 https://www.sdgpakistan.pk/web/sdgs (accessed November 25, 2020)

Ministry of Planning, Development and Special Initiatives, Annual Report, 2020. *https://www.pc.gov.pk/web/press/get_press/262* (accessed November 25, 2020)

Naeem, Shahid, Head of the SDG, Ministry of Planning and Development and Reforms, 2020.

Government of Pakistan, Ministry of Planning and Development and Reforms, *Concept note*, draft policy document, 2020.

Noor, Survey, International Islamic University, National Defense University, Quaid-e-Azam University, University of Gujrat, NUML, Islamabad, 2020

NUST Features Prominently in all 17 Goals of UN SDGs in Time Higher Education , *The Impact Ranking 2020 NUST*. http://www.nust.edu.pk/News/Pages/NUST-features-prominently-in-all-17-UN-SDGs-in-Times-Higher-Education-(THE)-Impact-Rankings-2020.aspx(accessed November 14, 2020).

Romer P, "Endogenous technological change", *Journal of Political Economy*, 98 no.5 (1990): S71–S102.

Romer P, " Increasing returns and long-run growth", *Journal of Political Economy,* 94 no.5(1986a):1002–1037.

Romer P, "Cake eating, chattering and jumps: Existence results for variational problems", *Econometrica*, 54 no.4 (1986b): 897–908.

Romer P, "Growth based on increasing returns due to specialization", *American Economic Review*, 77 no.2 (1987): 56–62.

Sánchez-Martín, Francisco Zamora-Polo, José Moreno Losada and Juan Pablo Parejo Ayuso, " Innovative education tools for developing ethical skills in university science lessons. The case of the moral cross dilemma, " *RAMON LULL 8,* (2017):225:245

UNDP, Policy support for mainstreaming the Sustainable Development Goals in Pakistan", *United National Development Program*, Pakistan, 2019. https://www.pk.undp.org/content/pakistan/en/home/projects/SDGsInPakistan