ISSN-3048-9296 (Online)

शोधामृत

कला, मानविकी और सामाजिक विज्ञान की सहकर्मी समीक्षित अर्धवार्षिक मूल्यांकित शोध पत्रिका

Online ISSN-3048-9296
Vol.-1; issue-2 (July-Dec.) 2024
Page No.-47-61

www.shodhamrit.gyanvividha.com

Dr. Dinesh Kumar Gupta

Assistant Professor,

Agrawal Mahila Teacher's Training College, Gangapur city, (Rajasthan) 322201.

Corresponding Author :

Dr. Dinesh Kumar Gupta

Assistant Professor,

Agrawal Mahila Teacher's Training College, Gangapur city, (Rajasthan) 322201.

Interdisciplinary Turn in National Education Policy—2020

Abstract: NEP 2020 recommends that, "in all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education. The assessment tools (including assessment 'as', 'of', and 'for' learning) will also be aligned with the learning outcomes, capabilities, and dispositions as specified for each subject of a given class" (NEP 2020, para 4.6). Some Indian education philosophers had also expressed their agreement towards experiential learning which helps in holistic development of children. Mahatma Gandhi, wrote in his book Nai Talim that 'work and knowledge should go together'. Children should be taught craft (work) not mechanically but scientifically (with reason and evidence) as it would develop the intellect of the child. According to Gandhi ji, 'the brain must be educated through the hand.' Sri Aurobindo believed that learning happens best in a free and creative environment that aids and allows development of child's interest, creativity, mental, moral, and aesthetic sense. J Krishnamurthy was of the view that since the purpose of learning is to develop a questioning mind and spirit, the teacher

has to free himself from mindless repetition of content and practices. Experiential learning, in very general terms, refers to acquiring knowledge through personal experiences. It is one of the most fun-filled, engaging, and effective ways to understand new concepts. This helps in moving away from rote memorization and provides children with hands on experiences.

Interdisciplinary thinking in robust multidisciplinary settings can act as a catalyst for promoting creativity and innovation in study and research at all levels. This forward-looking approach to education has won wider recognition globally. We also witness in the National Education Policy 2020 of India an interdisciplinary turn, away from the mono-disciplinary over-specialism. It is not just going trendy but the need of the hour as well. The move towards more multidisciplinary educational institutions thereby making them spacious for interdisciplinary thinking thus constitutes one of the core concerns of the policy. The present paper is an attempt to look into this interdisciplinary turn and related aspects and issues of National Education Policy–2020 (NEP—2020).

Keywords: Interdisciplinary, Turn, National, Education, Policy, 2020.

Towards a New Education Ecosystem – More Multidisciplinary in Structure and More Interdisciplinary in Spirit

NEP–2020 envisions an ecosystem of education more multidisciplinary in structure and intrinsically interdisciplinary in spirit. Instead of viewing various domains of knowledge as independent silos, this policy stresses piecing together diverse disciplinary perspectives and basic concerns of human life to develop such an educational ecosystem. It is thus set to make higher education in particular more multidisciplinary: "Moving towards large multidisciplinary universities and HEI [Higher Education Institutions] clusters is thus the highest recommendation of this Policy regarding the structure of higher education" (NEP–2020:34).

This is essential for the kind of education the policy is after. The NEP–2020 goes for an education that has to be more holistic in developing human potentialities and more integrated in every way. As the policy puts the point, "A holistic and multidisciplinary education would aim to develop all capacities of human beings – intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner" (NEP 2020:36).

However, the state of affairs in the Indian education system, particularly in the realm of higher education, is not so favourable for interdisciplinary thinking to thrive. Nearly half of the universities and HEIs in India are still mono-faculty universities or institutions. Various committees and commissions set up time to time for education reform cogently argued for conversion of such institutions into multidisciplinary ones. Yet much of the work to this end has been undone. The policy–2020 is very much focused

on achieving this goal.

NEP–2020 seeks to develop a nationwide ecosystem of vibrant multidisciplinary universities and institutions of higher education, breaking disciplinary boundaries in knowledge production and dissemination (Tilak, 2023:797). The policy puts the matter emphatically: "Single-stream HEIs will be phased out over time, and will move towards becoming vibrant multidisciplinary institutions or part of vibrant multidisciplinary HEI clusters, in order to enable and encourage high-quality multidisciplinary and cross-disciplinary teaching and research across fields" (NEP 2020:35).

For policy 2020, one of the major problems with higher education in India is that it currently represents 'a severely fragmented higher education ecosystem' and this inharmonious affair is going on mainly because the system on the whole is marred by 'a rigid separation of disciplines, with early specialization and streaming of students into narrow areas of study'; hence, the main thrust of the policy 2020 is 'to end the fragmentation of higher education', and to ensure eventually 'one coherent ecosystem of higher education' (NEP 2020:33-34). The education system is thus set to take an interdisciplinary turn leading to a colossal move towards comprehensive multidisciplinary universities and institutions of learning.

The Legacy of Holistic and Multidisciplinary Education

Interestingly, as it is argued elsewhere as well, "Indian intellectual landscape, with its diversity in culture and richness of philosophy, has been quite conducive to thinking in interdisciplinary spirit. India today goes on experimenting to integrate this legacy into its education system. India's National Education Policy 2020 is a paradigm example" (Choudhary, 2023b:39).

There has been a grand history of holistic and multidisciplinary education in India. The policy 2020 strives at once for a continuity of this legacy of antiquity and what is much sought after as multidisciplinary educational requirements in the global scenario of our times. It is another story that India could not keep this tradition going well enough for rather long when she was languishing under the foreign rule. The point is that narrow specialization and silo-thinking under rigid disciplinary boundaries are foreign to Indian intellectual tradition. The nation's extant education system needs to be invigorated by incorporating its glorious multidisciplinary tradition of teaching and research.

Thus the policy not only traces the Indian legacy of interdisciplinary thinking but also finds it quite relevant to the current context and emerging concerns. In ancient India, education imparted at major centers of learning was interdisciplinary in spirit, international in standard, and remarkably global in outreach. As the policy puts it: "World-class institutions of ancient India such as Takshashila, Nalanda, Vikramshila,

Vallabhi set the highest standards of multidisciplinary teaching and research and hosted scholars and students from across backgrounds and countries" (NEP 2020:4).

The curricular and pedagogical aspects of education in ancient India were interdisciplinary. This is evident in 'the extensive literature of India combining subjects across fields. For instance, "Banbhatta's *Kadambari* described a good education as knowledge of 64 *kalas* or arts; and among these 64 'arts' were not only subjects, such as singing and painting but also scientific 'fields', such as chemistry and mathematics, 'vocational' fields such as carpentry and cloth-making, 'professional' fields, such as medicine and engineering, as well as 'soft skills' such as communication, discussion and debate" (NEP 2020:36).

Thus, India's glorious past of multidisciplinary centres of learning along with its rich literature which integrates various knowledge domains breaking many boundaries is eloquent testimony to interdisciplinary educational experience par excellence. Indian ethos of education is not marked simply by a dalliance with multidisciplinarity; India has a long rich legacy of interdisciplinarity in classical forms which deserves to be attuned and continued in the current scenario.

Continuing the Legacy with a Global Vision

The NEP–2020 is set in the 21st Century global scenario which is marked by the rise of the fourth industrial revolution, yet it beautifully integrates the rich educational legacy of India into the contemporary settings. This policy 'envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant society by providing high-quality education to all, and thereby making India a global knowledge superpower' (NEP 2020:6).

Nevertheless, the question arises as to why is there so much stress laid upon the legacy that may have been much admired in antiquity but humankind is now heading towards forms of life dominated by virtual reality and adventures in AI? The question is particularly pertinent in the current scenario when the world is experiencing ever newer advancements in S &T which at once constitute the prevailing paradigm governing the educational reforms of the day. The main rationale behind it is that this legacy is as relevant to the present as it was in the past. Precisely speaking, more than one reason in this regard has been adduced in the policy, e.g.

- India's own multidisciplinary educational ••experience of antiquity
- The phenomenal success of multidisciplinary ••institutions the world over in our times
- Innovation and creativity achievable through ••interdisciplinary study and research in multidisciplinary settings

- The 21st century global employability scenario and relevant multidisciplinary skill requirements
- The need for more value-based and all-round ••development of individuals for personal accomplishments as well as social good

The kind of multidisciplinary educational experience ancient Indian universities used to cater to their students was conducive to interdisciplinary study and research. This naturally made the educational environment in those institutions vibrant and attractive for scores of native and foreign students across a wide range of subjects. Such a legacy can be profitably integrated into an educational ecosystem that is much sought after nowadays globally.

Thus, "India urgently needs to bring back this great Indian tradition," the policy puts emphatically, "to create well-rounded and innovative individuals, which is already transforming other countries educationally and economically" (NEP 2020:34). Several modern universities in developed countries like those in the USA are functioning as large multidisciplinary universities with great success. Interestingly, "much of the very best research in the world has occurred in multidisciplinary university settings" (NEP 2020:45).

In the policy 2020, there is also an underlying conviction that our cognitive pursuits have somehow an essential unity. For, all our study and research endeavours belong to the same human knowledge situation. Different disciplines are constructed conventionally for the sake of convenience; they can only partially represent our life-world. Thus it becomes mandatory to maintain the ultimate unity of all human knowledge. This is also central to the Indian view of interdisciplinarity (Choudhary, 2014). Thus, fundamental to the policy 2020 is the guiding principle: "multidisciplinary and holistic education across sciences, social sciences, arts, humanities, sports for a multidisciplinary world to ensure the unity and integrity of all knowledge" (NEP 2020:5).

Interdisciplinarity in NEP 2020

Before we proceed any further it would be helpful to form a general conception as to what is interdisciplinarity, how it is related to multi disciplinarity, and why it is so central to the policy 2020.

Interdisciplinarity is a leading principle, method, and process of study and research which has great contemporary relevance. It is also considered an efficacious antidote to compartmentalization and ensuing fragmentation of knowledge. Interdisciplinarity is, however, not a disciplinary. While going interdisciplinary, we are required to view different disciplines not as isolated and independent domains, but as integral units of

the larger landscape of human knowledge situation.

A good interdisciplinary work, according to Klein, "requires active triangulation of depth, breadth, and synthesis". Clarifying the three crucial concepts, she says, "Breadth connotes a comprehensive approach based on multiple variables and perspectives. Depth connotes competence in pertinent disciplinary, professional, and interdisciplinary approaches. Synthesis creates an interdisciplinary outcome through a series of integrative actions" (1996:212).

Interdisciplinarity presupposes multi disciplinarity. Interdisciplinary thinking is practicable only when there already exist multiple disciplines as an integral part of a larger knowledge situation and they are remarkably involved in interaction among themselves, though somehow maintaining their identity. Unless we have more than one discipline at work in the intellectual landscape, interdisciplinary study and research are simply inconceivable.

Interdisciplinarity calls for an interaction between two or more disciplines, derives diverse ideas and inputs from them, and tries finally to reach an integration of them. What is important to note in this regard is: "Merely bringing insights from different disciplines together in some way but failing to engage in the hard work of integration is multidisciplinary studies, not interdisciplinary studies" (Repko, 2008:1300).

In effect, the interaction involved in the interdisciplinary process is not merely a general interaction of mere give-and-take type; integration of diverse disciplinary inputs is essential to it. The integration achieved through this process is also meant to create something significantly new – some innovative and creative outcome out of the pre-existing types. Thus, interdisciplinary study and research accords greater importance to the interaction of different disciplines and the integration of inputs generated therefrom. So an interdisciplinarian relies on collaboration and teamwork among diverse knowledge workers across fields while carrying out the task of knowledge production and dissemination.

Since the interdisciplinary process invariably calls for multiple disciplines that be involved in interaction with each other, multidisciplinary settings are often considered as *sine qua non* of interdisciplinarity. As Repko points out, "The major premise of interdisciplinary studies is that the disciplines (including interdisciplines) are necessary preconditions of interdisciplinarity" (2008:15). In effect, compared to single- or mono-disciplinary institutions, a comprehensive multidisciplinary university naturally provides more spacious and diversified structure in which interdisciplinary thinking can flourish well.

This has been recognized in the policy 2020. With multidisciplinary institutions on the

rise, there will be more opportunities for interdisciplinary thinking and research. More specifically, the move towards the interdisciplinary turn is meant to help:

- end the fragmentation of higher education (NEP 2020:34)
- build vibrant communities of scholars and peers (ibid.)
- break down harmful silos (ibid.)
- enable students to become well-rounded across disciplines (ibid.)
- develop active research communities across disciplines including cross-disciplinary research (ibid.)
- enable more creative combinations of disciplines (ibid:37)
- develop well-rounded individuals (ibid:36)

In addition to its cognitive values, the need for more interdisciplinary thinking is prompted by certain situational factors as well. Such factors have emerged noticeably in our times giving rise to many complex problems. So the policy 2020 takes such situational factors too into account, e.g.

- increasing demand for 'multidisciplinary abilities ••across science, social sciences, and humanities' (NEP 2020:3).
- burning problems such as climate change, ••increasing population, depleting natural resources, public health, and so on (ibid).
- the growing emergence of the pandemic calls for ••closer collaborative research in infectious disease management and the development of vaccines and resulting social issues (ibid).
- need to develop well-rounded individuals who ••would have a deeper knowledge of specialized areas of interest as well as character, concern, and commitment for society (ibid:33).
- nature and dimensions of 'the societal problems ••that our country needs to address today' and that will 'require high-quality interdisciplinary research across fields' (ibid:45).

It is also important to note that interdisciplinary thinking is quite needed at every level of education, and it is indeed involved in varying degrees at various stages as a matter of course. So the policy seeks to increase flexibility and choice of subjects right from the school level. In secondary education, as the policy promises, there will be no discipline-bound hard separation either in the curricular or in the extra-curricular aspects of the teaching-learning process (NEP 2020:13). The policy 2020 thus lays stress on the need for more interdisciplinary thinking across all institutions and all stages of

education as well as across curriculum and pedagogy in them.

Some Leading Interdisciplinary Aspects of the Policy

Another related point of great pertinence is that the interdisciplinary turn in current education policy is not outlandish or accidental anyway. There are crucial conceptual considerations that are concomitant with the colossal move towards interdisciplinarity. A question naturally arises here as to what are the leading aspects and conceptual bases of the policy that are central in this regard.

Some leading aspects of NEP 2020 are of overarching importance as they constitute the conceptual foundations for the policy. They represent the underlying principles of the policy set to work in tandem with its interdisciplinary goals. Such principles, in the main, are the following:

- Meta- and experiential learning
- Higher order skills
- Interdisciplinary pedagogy
- Synergy in the education system and knowledge integration

These principles are discussed here at some length one by one, as follows:

Meta and Experiential Learning

As the first thorough-going education policy of the twenty-first century, NEP 2020 could not be heedless of the developmental goals, skills, and value requirements for the emerging new realities. In the face of the new and upcoming education ecosystem and fast-changing employability scenario the world over, 'it is becoming increasingly critical that children not only learn but more importantly learn how to learn' (NEP 2020:3). For, as H. Gerjuoy commented long back in an interview with A. Toffler, "Tomorrow's illiterate will not be the man who cannot read; he will be the man who has not learned how to learn" (Toffler, 1971:414).

This shift from mere 'learning' to 'learning how to learn' represents something of a cognitive ascent which may be termed as *meta-learning.* It is marked by a shift from thinking merely about things and facts to a higher-order critical thinking about thought and thought-processes, concepts and conceptual connections' (Choudhary 2023a:197). Meta-learning is vital for the policy to give it an interdisciplinary character. For, meta-learning is not confined to any particular discipline, rather it is ubiquitously useful across fields – it is transdisciplinary by its very nature. It essentially involves conceptual understanding and critical thinking beyond disciplinary boundaries, and thus it is quite useful in interdisciplinary thinking.

Meta-learning involves cognition itself, or it is better to say that cognition is treated

here as such at the conceptual level. This amounts to a sharp departure from a passive factual approach towards objects as it is often carried out in specialized disciplinary pursuits. In meta-learning, one gets deeply engaged in a critical and creative understanding of the matter with little regard for rigid disciplinary structures and strictures. But there is no denying that the department-bound parochial approach is often deep-rooted in people of the extant education system. This sort of mentality has been termed as 'departmentality' (Choudhary, 2021:238). Meta-learning is needed to cope better with it and to facilitate interdisciplinary thinking fundamentally.

Coupled with meta-learning, the policy 2020 accords great importance to experiential learning as well. Meta-learning and experiential learning are intimately related as they mainly represent the conceptual and the application aspects of the phenomenon respectively. What all this boils down to is to make the process of learning move towards 'relevant higher-order skills and application of knowledge in real-life situations, rather than rote memorization' (NEP 2020:18). Meta-learning departs sharply from meekly passive learning and mechanical memorization. Learning by rote, for instance, represents a rather rudimentary form of learning that needs to be avoided for a better conceptual understanding of the matter.

An efficacious way of dealing with such problems in learning is to ensure that the learner knows how to apply the matter correctly in appropriate contexts and effective problem-solving. Experiential learning becomes inevitable in this regard, and the policy 2020 recognizes it well. "In all stages," the policy promises, "experiential learning will be adopted, including hands-on learning, art-integrated and sports-integrated education, story-telling based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects" (NEP 2020:12).

In experiential learning, a learner is needed to undergo the first-hand experience of the matter. It involves intensive active learning through doing things in life-situations to develop appropriate know-how. It is thus marked by a move 'towards competency-based learning and education' which significantly involves 'assessment *as*, *of*, and *for* learning' (NEP 2020:12). The process, approach, and outcome in experiential learning remain all interdisciplinary. The learner is more interested in attaining skillful knowledge for problem-solving, and little concerned about disciplinary confinements.

Higher-order Skills

There is a more conspicuous way in which educational experience undergoes a cognitive ascent in meta-learning, and which is also conducive to interdisciplinary thinking. Meta-learning inevitably calls for certain higher-order skills which know no disciplinary boundaries. NEP 2020 takes them well into account. Some of such skills that

emerge as recurring themes in the policy at various places are analytical and critical thinking, logical and moral reasoning, conceptual understanding, problem-solving, and the like (NEP 2020:4-5,15,17).

Critical thinking, for instance, is quite conducive to the growth of broad-based, innovative, and interdisciplinary thinking. It helps us see ideas and problems in a larger context with a gamut of conceptual connections across disciplinary borders. Thus we can also posit the matter on the whole in the larger context of real-life situations enabling us to think about things more creatively and innovatively.

There is also a deeper logic behind espousing critical thinking in the face of regimented disciplinary pursuits. As a matter of course, every disciplinary pursuit in which too much specialization and expertise are involved is exposed to a specific kind of danger. The structure and strictures of the discipline may not remain subject to reason alone, rather they may turn into objects of obeisance for most of its practitioners. Too much discipline and regimentation tend to ossify our specialized intellectual pursuits into a new kind of dogma impeding creativity and innovation. Critical thinking thus becomes inevitable for coping with any such dogma.

In NEP--2020, one of the fundamental principles that is set to guide the education system is to focus on 'creativity and critical thinking to encourage logical decision-making and innovation' (NEP 2020:5). Logical reasoning is such a higher-order skill that helps us develop fundamental conceptual framework also for the disciplinary endeavors. Needless to say, logical reasoning is elemental to many other key skills and core competencies. Scientific temper, evidence-based thinking, conceptual clarity, problem-solving, mathematical and computational thinking, and many more are inconceivable without being founded upon logic.

In a similar vein, ethico-moral reasoning is also applicable to many advances and breakthroughs in S&T. The rise of diverse disruptive technologies, which were mostly unthought of till recently, is an intriguing case in the point. Newer patterns of work and forms of life are emerging and many older ones are becoming obsolete in the wake of new technologies. NEP---2020 is quite particular about such unprecedented opportunities and complex challenges, the implications of which go far beyond the conventional boundaries of science itself. For instance, the policy considers it mandatory to take into account 'ethical issues surrounding the development and deployment of AI-based technologies' (NEP 2020:58).

Logic and ethics traditionally represent two core branches of philosophy, but in the contemporary context, these two have gained renewed significance due to their propensity for interdisciplinary applications. Complementarily, they can work together

towards addressing lots of burning problems and contentious issues more reasonably. Logical reasoning can conceptually equip us with a sound and valid framework to reach ethical decisions that are inaccessible by any discipline singularly. On such bases, one can reach logically reasonable and ethically right decisions, and maintain and express one's position more plausibly and persuasively across disciplinary lines.

Interdisciplinary Pedagogy

Meta and experiential learning necessitate further interdisciplinary developments in many ways, of which the emergence of interdisciplinary pedagogy is quite pertinent for the present.

Pedagogy is generally viewed as primarily concerned with appropriate methods and approaches applicable to the practice of teaching. How ever in the process of its application, pedagogy also involves curriculum, assessment, and other leading components and many theoretical aspects of the teaching-learning process. Pedagogy is thus a complex and dynamic concept and so it has more than one form. From the interdisciplinary point of view, three main forms of pedagogy are particularly interesting: (i) General Pedagogy, (ii) Special Pedagogies, and, (iii) Pedagogy as an academic field.

(i) Pedagogy in general is viewed as an extension of epistemology in various areas of knowledge creation. As O'Conner and Carr said, 'epistemology has a close connection with the philosophies of all those disciplines which seek to attain knowledge of one set or another, though remaining of more general scope than any of them' (1982: viii). General pedagogy is thus of fundamental importance to the epistemology of interdisciplinary study and research. That being so, general pedagogy does not differentiate between various academic disciplines insofar as the method and practice in them are concerned. It is mainly concerned with the most fundamental features, comprehensive principles, and fundamental problems involved in our knowing process. Since NEP 2020 is a wide-ranging policy initiative towards education reform, it is naturally concerned with general pedagogy in more comprehensive ways.

(ii) There are also discipline-specific variants of pedagogy. We have 'standard pedagogy within each subject' (NEP 2020:12). In the current education system, there are many different subjects of specialty, and so we have special pedagogies more suitable to meet specialized purposes. Special pedagogies are instrumental in consolidating respective disciplines as pretty independent fields of study and research. Nevertheless, a few points of pertinence, stand out here. Special pedagogies despite their narrow approach and sharp focus on specialized study and research do have some interdisciplinary significance. They add remarkable depth to the pedagogy and thereby

also enrich interdisciplinary thinking pedagogically. Secondly, with the advent of interdisciplinarity, the disciplinary borders no longer remain so hard and fast as to cordon off one knowledge domain from the others. Many borderline cases refuse to fall on either side of the disciplinary boundary. In effect, any attempt to draw the lines of demarcation between disciplines at once gives rise also to a borderland that forms the inter discipline. Such borderlands gradually evolve into fertile sites for knowledge production, and they call for new methods of teaching-learning that may be called 'border pedagogy' (Collins 1995:221).

(iii) Pedagogy as an academic field on its own is common nowadays, particularly in the field of educational studies. For instance, pedagogy as a specialized subject is noticeable as forming a vital component of teacher education programmes. The area of pedagogical studies includes not only general principles and fundamental problems of pedagogy but also subject-specific pedagogical knowledge, skills, and dispositions. This form of pedagogy thus remarkably combines the breadth of general pedagogy and the depth of special pedagogies.

The policy 2020 takes well into account that the pedagogy of teacher education is of great interdisciplinary significance. It essentially involves multi-disciplinary engagement and multi-faceted development of skills and dispositions. The policy puts it thus, "As teacher education requires multi-disciplinary inputs, and education in high-quality content as well as pedagogy, all teacher education programmes must be conducted within composite multidisciplinary institutions" (NEP 2020:42).

Similarly, 'professional education should not take place in isolation of one's specialty' (NEP 2020:50). So, the pedagogy of various kinds of professional education, e.g. healthcare education, legal education, technical education, etc. also needs to be revamped on interdisciplinary lines. As the policy puts it emphatically, "Preparations of professionals must involve an educational ethic and importance of public purpose, an education in the discipline, and an education in practice. It must involve critical and interdisciplinary thinking, discussion, debate, research, and innovation" (NEP 2020:50).

In the policy 2020, curricular and pedagogical reforms are set to go hand in hand towards making way for interdisciplinary thinking. Such vital aspects of education need to be aligned with the multi-disciplinary requirements of the twenty-first century. Accordingly, pedagogy is required to make room for students 'to study one or more specialized areas of interest at a deep level', and at once, provide opportunities to develop 'capabilities across a wide range of disciplines involving sciences, social sciences, arts, humanities, languages, as well as professional, technical and vocational subjects' (NEP 2020:33).

The ultimate rationale behind the urge for interdisciplinary pedagogy lies in the deeper dimensions of human knowledge. At the bottom of the matter is the conviction that there is an underlying unity in human knowledge at large. Interdisciplinarity in pedagogy can be maintained and sustained only by maintaining synergy in the education system and integration of knowledge.

Synergy in the Education System and Knowledge Integration

A good system of education is a harmonious and sustainable one. Such a system functions in an integrated and holistic manner from the most fundamental to the higher levels, and also across various subjects of study at each stage. Curriculum, pedagogy and other aspects of such a system of education are required to function synergistically. Hence, one of the guiding principles of the policy 2020 is to maintain 'synergy in curriculum across all levels of education from early childhood care and education to school education to higher education' (NEP 2020:5).

This education policy is also guided by the philosophic principle that there is an underlying unity of all our myriad knowledge pursuits as they ultimately represent life and the world at large. It is thus essential 'to ensure the unity and integrity of all knowledge', and to that end in view, 'multidisciplinary and holistic education across sciences, social sciences, arts humanities, and sports' becomes crucially important (NEP 2020:5).

The interdisciplinary turn in the policy 2020 is thus aimed at bringing in extensive integration of different subjects of study, as well as various skills, values, and related learning activities. Such a knowledge integration of epic proportions is no doubt more an ideal, yet this is what makes our intellectual pursuits ultimately meaningful and which an interdisciplinarian eventually aspires to achieve to the greatest possible extent.

The policy 2020, envisions integrating as diverse components as arts, culture, sports, and like extra-curricular activities into the curricular aspects of education from the very early schooling of children. Particularly, from the secondary level of education and upwards, the hard separation of knowledge domains and fragmentation of related activities are set to go away to make education more integrated and holistic (NEP 2020:12-13). At the higher levels of education, the policy promises to give students a more multidisciplinary and all-round educational experience.

Knowledge integration is also set to be promoted in the policy for the growth of 'creativity and invention, creative thinking and higher-order thinking capacities, problem-solving abilities' (NEP 2020:36). The policy recognizes well that the integration of humanities and arts with STEM, in particular has shown phenomenal outcomes world

over. So the policy emphasizes: "Even engineering institutions such as IITs, will move towards more multidisciplinary and holistic education with more arts and humanities. Students of arts and humanities will aim to learn more science and all will make an effort to incorporate more vocational subjects and soft skills" (NEP2020:37).

Concluding Remarks

A system of education more multidisciplinary in structure and more interdisciplinary in spirit is the need of the hour indeed as the country requires urgently to adapt to emerging realities in all walks of life. It is time to go beyond the binary of the two culture, the sciences, and arts, and to see various subjects of study as a spectrum of intellectual activities well-grounded in the larger context of life and the world.

But the question of great pertinence for the present is: Are multidisciplinary and interdisciplinary the same or different; and if different, how do the two get together so well?

Multidisciplinary and interdisciplinarity are not the same, yet they are closely connected and mutually supportive. The former may be confined to general interaction between different disciplines, while the latter is also concerned with the integration of inputs gained from different disciplines in the course of their interaction. But this distinction seems to be glossed over in the policy document on occasions. Though NEP 2020 speaks of the need for knowledge and skill integration of several sorts, it often misses the integrative characteristic while dealing with multidisciplinary and interdisciplinarity in detail.

Interdisciplinary in turn is going to be of great help to overcome the evils of over-specialization and silo-thinking. The NEP–2020 is set to make the education system more integrated and all-round in developing human capacities and the desired set of skills and values. This move is also meant for dealing with a good many complex problems of our age, such as environmental crisis, public health, and fallouts of disruptive technologies, which inevitably calls for multidisciplinary engagement. However, the aspirational goals set to be achieved through interdisciplinary at times seem to be too ambitious.

NEP–2020 is aimed at bringing in a grand integration through the interdisciplinary turn. Different subjects of study, sundry skills, values, and various learning activities are supposed to create an educational ecosystem all in one piece. Such a grand synthesis may seem to many more an ideal; no matter how pleasing and inspiring it may be, it can never be realized fully.

In actuality, interdisciplinarity itself is not always without cost. It is no panacea for all

the side effects of specialism in education and research. An enthusiast in interdisciplinary ways tends to miss the necessary rigor and sharp focus that are required for serious study and frontline research in any field. He or she may have a wide spectrum of issues and approaches to address a great many things, but nothing to know so deeply as to lead towards frontline study and focused research. Without having any committed and coherent view of the subject all his/her research efforts may go astray. Thus the point, as it has been discussed at length elsewhere, is: "Being interdisciplinary does not always give us an advantage over being disciplinary. Neither can one be interdisciplinary without being disciplinary first" (Choudhary, 2017:25). An interdisciplinary pursuit should begin with solid disciplinary base – disciplinary depth is as essential as interdisciplinary breadth.

References

1. Choudhary, R., K., S. (2021). Integrating Interdisciplinarity through Philosophy, D K Print world: New Delhi.
2. Choudhary, R., K., S. (2023). National Education Policy 2020: Explicating its Philosophy and Pedagogy, *Journal of Educational Planning and Administration*, 37.3: 193-207.
3. Choudhary, R., K., S. (2023b). Thinking Inter disciplinarily: Exploring Indian Experiences and Experiments, In Society, Sciences, and Arts in the (Post) Digital Era, Osijek, Croatia: JJS University, 39-40.
4. Choudhary, R., K., S. (2017). Issues Involved in Interdisciplinarity, *Indian Philosophical Quarterly*, 44.3-4: 23-41.
5. Choudhary, R., K., S. (2014). An Indian View of Interdisciplinarity, *Prabuddha Bharata*, 119.9:516-522.
6. Govt of India (2020). National Education Policy-2020, Ministry of Education, Government of India, New Delhi. [*abbreviated in the above as NEP 2020*] *http://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_O.pdf*
7. Klein, J., T. (1996). Crossing Boundaries: Knowledge, Disciplinarities and Interdisciplinarities. Charlottesville, University Press of Virginia: VA.
8. O'Conner, D., J. and Carr, B. (1982). Introduction to the Theory of Knowledge, Harvester Press: Sussex.
9. Repko, A., F. (2008). Interdisciplinary Research: Process and Theory, Sage Publications: Los Angeles.
10. Tilak, J., B., G. (2023). Reforming Higher Education in India in Pursuit of Excellence, Expansion, and Equity, In P. Mattei (ed.) et al., The Oxford Handbook of Education and Globalization, Oxford University Press: UK.
11. Toffler, A., (1971). Future Sock, Bantam Books: New York.
