



## A Comparative Study of Epistemological Foundations of the “Fundamental Reform Document of Iran Education System” and Rhizomatic Approach

Mahbobe Janbozorgi<sup>1</sup>

Hamid Reza Rezazadeh Bahadoran<sup>2</sup> (Corresponding author)

Abbas Gholtash<sup>3</sup>

Alireza Araghieh<sup>4</sup>

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### ABSTRACT

The purpose of study was a comparative study of the epistemological foundations of the “Fundamental Reform Document of Iran Education System” and the epistemological foundations of the rhizomatic approach. The research method was comparatively qualitative and research population includes all related resources such as books and journals. Method of data collection and analysis were documentary and content analysis respectively. Findings reveal similarities between two epistemological foundations in different aspect of cognition such as goals (dynamics of science), domain (rationalities), method (acquired science), source (experience) and tool (senses and desire). The main differences between the epistemological foundations of the Fundamental Reform Document of Iran Education System and rhizomatic approach are in goals of cognition (Human-centered, reason , becoming), domain of cognition (effects), nature of cognition (existential , non-organic oriented), method of cognition (presence science, confronted-oriented science), source of cognition (revelation, intellect, communication) and tool of cognition (inspiration , intuition, heavenly book , network). It is suggested that in the process of revising “Fundamental Reform Document of Iran Education System”, the epistemological foundations of the rhizomatic approach should be considered by Iranian educational policy makers

### KEY WORDS

Epistemological Foundations  
Fundamental Reform  
Knowledge  
Rhizomatic Approach  
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<sup>1</sup> Ph.D. Student, Department of Educational Sciences, Central Tehran Branch , Islamic Azad University, Tehran , Iran, Email: bozorgimahbob@gmail.com

<sup>2</sup> Associate Professor, Department of Education Sciences, Central Tehran Branch , Islamic Azad University, Tehran , Iran, Email: ham.rezazadeh\_bahadoran@iauctb.ac.ir

<sup>3</sup>. Associate Professor, Department of Educational Sciences, Marvdasht Branch , Islamic Azad University, Marvdasht , Iran, Email: gholtash578@miau.ac.ir

<sup>4</sup> Associate Professor, Department of Educational Sciences, Eslamshahr Branch , Islamic Azad University, Eslamshahr , Iran, Email: araghieh@iiau.ac.ir

## 1. Introduction

Epistemology has always been one of the most important philosophical topics. Philosophical contemplation in the world is possible only by contemplating knowledge, because the philosopher has no goal other than knowing and discovering reality. Discovering reality by proving the realism of philosophical propositions is possible only by proving human knowledge. In the history of philosophical thought, there are at least three approaches to epistemology: Traditional, modern and contemporary approaches. The traditional approach was taken from Greek thought - especially the philosophy of Socrates, Plato and Aristotle and their followers - and the modern approach dates back to the Descartes era. Traditional and modern epistemologists saw the attainment of certainty as possible, while contemporary epistemologists were frustrated with the attainment of certainty. They do not consider certainty knowledge sufficient and intend to prove human sciences and knowledge in a way other than rational certainty. Contemporary epistemology researches the nature of knowledge by analyzing and defining the word "wisdom" and using the method of analytical philosophy. Also, they define the characteristics of knowledge categories and evaluate complaints (Sarmadi, Seif & Talebi, 2012).

Teaching-learning approaches are epistemologically divided into three poles: Empiricism, rationalism and modernity, and are generally multi-paradigm. Although John Locke was the first empiricist to propose behavioral atomism, for Berkeley and Locke, there is no first quality. These two philosophers believed only in secondary quality. All materials of knowledge arise from sensory perceptions. Of course, Locke also believed in intuition and analogy to some extent. Descartes, Leibniz, and especially Kant are among the most famous rationalist philosophers. Descartes raises the question of duality, pointing to the emergence of two opposing currents of idealistic and mechanical knowledge and mind and body. Leibniz, like Descartes, did not confine himself to the integration of empirical theory and the theory of instinct, and by establishing the knowledge of "Monadology" he coordinated the earlier intellectual foundations. Kant believes that man is capable of cognition with the fourfold plan of a priori and a posteriori combination and a priori and a posteriori analysis (Shabani Varki, 2004).

Modern epistemology seeks to answer the question that "Is there a possibility of continuity in epistemology?" Existentialist humanistic epistemology emphasizes intuitionism, while in modern epistemology, pragmatism takes precedence over totalitarianism. From the point of view of modern pragmatism - like Willard Van Orman Quine's ideas - there is a single structure for the whole of

knowledge in which no division of the analytical-authorial type is conceivable. In contrast to pragmatism, there are transcendentalists such as Henri Giraud, Habermas, Lyotard, and Rorty who emphasize the epistemology of agreement or "paralogia" and legitimize the agreement on pluralism, dissent, innovation, and creativity (Bagheri, 2007). In fact, philosophy from the nineteenth century onwards was met with a subversive critique. The new philosophers question any truth, order, structure, system, or ideology. They always try to reveal the hidden motives and contradictory assumptions of systematic ideas or established institutions. Radical critique and skepticism are at the heart of such philosophies, but at the same time the desire and openness of our lives is accompanied by a kind of dynamic and changing nature. This life is a sign of becoming and unceasing, which for philosophers - such as Jacques Derrida and especially Gilles Deleuze - in addition to the destructive aspect of thought, also brings a positive and fruitful aspect to creativity.

Gilles Deleuze tries to introduce a new look at knowledge by presenting a horizontal and transverse approach to knowledge namely "rhizomatic approach". This view, as opposed to the tree-based approach to knowledge, challenges all of these systems. The rhizomatic approach is based on the negation of all metanarratives and the increasing validity of micro, individual and situational understandings, emphasizing continuous and aimless becoming, and irrationality. Deleuze believes that tree systems are linear, hierarchical, static, and vertical and suggest cuts, divisions, and policies between things. Tree thought is the same as "thought of been ", while rhizome thought is "thought of becoming". In rhizome thought, multiple transformations are nonlinear, in different ways, related to other lines and without the boundaries of tree thought. Rhizomatic idea can break down spaces and lines of tree thinking and reorganize it into a network of interactions. This idea is a thought whose end point is the beginning of a new path and therefore it cannot be imagined to be the beginning and the end. Rhizome thought is not subject to any structural or reproductive pattern (Bagheri Nejad, 2009).

In education, the basic questions about epistemology are divided into four categories: a) questions focused on the nature of knowledge, b) types of knowledge, c) limits of knowledge, d) basics of knowledge (Sarmadi et al., 2012). As most of the epistemological foundations of the Fundamental Reform Document of Iran Education System (hereafter FRDIES) are influenced by the transcendent wisdom of Mulla Sadra; therefore, here it is necessary to clarify the concept and meaning of philosophy in transcendent wisdom. Transcendent Wisdom is the name of the philosophical school of "Mohammad Ibn Ibrahim Sadruddin Shirazi" (1571-1635) known as "Mulla Sadra or Sadr al-Mutalahin", a Muslim philosopher of the sixteenth centuries in Islamic philosophy.

The central principle of transcendent wisdom is the originality of existence and the validity of nature, which Mulla Sadra has made the basis of most of his philosophical discussions. Combining Quran teachings - in a rational way - with the help of emotional and mystical methods is one of the basic features in transcendent wisdom (Sattari, 2014). This school is based on three important principles: 1) transcendent wisdom which is an existential philosophy; 2) gradation and ranking of scientific topics; and 3) method of philosophical understanding based on reasoning, intuition and revelation. Also in Mulla Sadra's realist approach, true knowledge has three pillars of certainty, correspondence to reality, and stability (Latifi, 2017).

During the last four decades and after the victory of the Islamic Revolution of Iran in 1979 and formation of the Islamic Republic, a change in the educational system - with emphasis on the unity of the political system and religious system - was influenced by Islam and Sadra philosophy. The plan for fundamental changes in the education and research system in the philosophy of education of the Islamic Republic of Iran began with a political-religious orientation in December 2009. In March 2013, this project entitled "Theoretical foundations of fundamental change in the formal education system of the Islamic Republic of Iran" including three sections of philosophy of education, philosophy of formal and general education in the Islamic Republic of Iran and guidelines for the formal education system (Supreme Council of Cultural Revolution, 2011). In this very extensive plan, the national document of education of the Islamic Republic of Iran in the horizon of 2025 for the establishment of the Iranian-Islamic educational system.

Undoubtedly nowadays educational activists and experts are inevitably confronted, involved and commented on matters that originate from philosophical challenges. The education system of the Islamic Republic of Iran, willingly or unwillingly, is in a situation where it is facing new fundamental conflicts and must devise appropriate ideas, programs and methods. In fact, one of the profound theoretical challenges between the epistemological foundations of FRDIES and current modern philosophies can be attributed to new scientific approaches and new technologies - especially IT and ITC. These developments have made the available plans and programs inefficient. In other words, in line with the rapid changes in societies and flow of knowledge production and the obsolescence of previous knowledge, educational systems must place more emphasis on learning new areas of knowledge, self-learning and lifelong learning. The epistemology of FRDIES (Mulla Sadra Theory) in confronting and adapting to the epistemological approach of the rhizomatic approach (Gilles Deleuze) can face new challenges and threats. Naturally, knowing the

degree of conformity of the epistemological foundations of the FRDIES requires recognizing the differences and similarities between Mullah Sadra's theory and the rhizomatic approach.

Of course, some research has been done in this regard. For example in his article Noel Gough (2006), "Shaking the Tree, Making a Rhizome: Towards a nomadic geophilosophy of science education" enacts a philosophy of science education inspired by Gilles Deleuze and Félix Guattari's figurations of rhizomatic and nomadic thought. It imagines rhizomes shaking the tree of modern Western science and science education by destabilizing arboreous conceptions of knowledge as hierarchically articulated branches of a central stem or trunk rooted in firm foundations, and explores how becoming nomadic might liberate science educators from the sedentary judgmental positions that serve as the nodal points of Western academic science education theorizing . Sametsky (2003a) in her article "The Problematics of Human Subjectivity: Gilles Deleuze and the Deweyan Legacy" explains and compares two approaches - one representative of pragmatism and the other of post-structuralism - and examines the formation of the subject in Deleuze's philosophy. In this article, she seeks to create a space for initial dialogue between two philosophical ideas to examine the possibility of applying Deleuze's philosophical views in educational theory and practice. St. Pierre, (2004) in her paper entitled "Deleuzian Concepts for Education: The subject undone" examines and explains Deleuze's views on American education. She points out that the danger of industrialization of education - most notably the US federal policy in the 1990s - had been warned in advance by Deleuze. According to Deleuze, this policy introduced a top-down linear rationality in research. Accordingly, St. Pierre declares her goal to critique a set of values accepted in American society and tries to introduce a new model for the U.S. education system.

Research findings in Iran show that there are many challenges between the epistemological foundations of FRDIES and modern epistemological foundations. Accordingly, the epistemological perspectives of FRDIES are not realized and do not have a desirable output, which can be attributed to several factors. Sarmadi, Zarabian, Saif, & Fatemian, (2019) examined different generations of distance education and educational philosophical schools, concluded that social networks are powerful tools for the educational environment and the epistemological function of these networks are explained under the philosophical umbrella of communism. Tari, Zarghami, Mahmoodnia & Ghaedi, (2020) believes that the nature of relationship between teacher and learner is rhizomatic according to Deleuze's views and has characteristics such as connection and heterogeneity, multiplicity, nomadism, design plan, and unrighteous rupture of the rhizome.

Salsbili (2016) believes that the national curriculum document is an extremely idealistic interpretation of "perspective section" of FRDIES - with emphasis on extensive prescriptive features and a strong presence of ideological dominance over the mechanisms of the educational system. Mohammadi Chabaki & Shabani Varki (2013) indicated that contemporary educational theories have been formed under the influence of the components of the "paradigm of simplicity" and therefore a large part of their problems and shortcomings is because of this paradigm. By comparing philosophical reasoning methods and the epistemological components of the simplicity paradigm (certainty, representationalism, and adaptive theory), they introduce the epistemological components of the complexity paradigm (uncertainty, distributive representation, fuzzy theory of truth). Haghverdi (2011) in his research entitled "Analysis and Critique of Rhizomatic Approach based on the Philosophy of Enlightenment" compared the educational perspectives of these two approaches. They concluded that both approaches reject presentation in learning and criticize monotonous structures in education. Also, rhizomatic approach with its features challenges many components of moral education.

Eskandari; Fardanesh & Sajjadi (2010) in a study entitled "communication in competition or alignment with other learning theories" showed that this theory can have many guidelines and applications as a new partner of learning theories especially e-learning. Hakimzadeh (2008) in her research entitled "Study of the philosophical foundations of the world education program and its comparison with the philosophical foundations of the education system of the Islamic Republic of Iran" showed that knowledge is relative both in terms of human capabilities and in terms of relationship with the representative. Therefore, the tools for acquiring knowledge according to philosophical foundations of the education system of the Islamic Republic of Iran include wisdom, reasoning, logic, intuition, imagination, feeling and observation. Imanzadeh (2008) investigated foundations of Gilles Deleuze's epistemological perspective and its critique based on Sadra's epistemology and refers to elements in Sadra's approach that are in contrast to Deleuze's opinions. The researcher has concluded that Deleuze's epistemology completely rejects the principles of representation of hierarchy and discipline that are emphasized by Sadra's epistemology. According to this introduction, research questions:

- What are similarities between epistemological foundations of the document of FRDIES and epistemological foundations of rhizomatic approach?

- What are differences between epistemological foundations of FRDIES and epistemological foundations of rhizomatic approach?

## 2. Research Method

The method of the present research is comparatively qualitative. The research population includes all primary and secondary sources that have been published in the last two decades (2021-2001). For sampling, purposive sampling method and theoretical data saturation was used. Method of data collection was documentary using keyword search in databases such as Google, Eric and Iranian websites of SID, Elmnet, MagIran and Noormags ( $n = 64$ ). For data analysis, deductive content analysis has been used by presenting a definition of the category and summarizing data content analysis, propositions that have little to do with research or those that have similar meanings were left out (first summary), then similar propositions were categorized (second summary), here by excluding the propositions that are generalized in the expressions and the abstract propositions are summarized (Flick, 2014). To present the research findings, the comparative method of Bereday - according to the nature and type of study which is a comparative study- was used in four stages of description, interpretation, juxtaposition and comparison.

## 3. Findings

### A) Description

In this section, data related to the epistemological foundations of FRDIES and epistemological foundations of the rhizomatic approach are presented, according to the four stages of Bereday's approach.

#### *First) Sadra's epistemology*

The content of FRDIES is strongly influenced by Mulla Sadra's epistemological foundations. The epistemological foundations in this collection are part of the descriptive and explanatory propositions about human cognition and its limits. According to the conventional tradition in philosophical discussions and due to the great importance of the field of epistemology in explaining the philosophy of education, the principles related to this field have been distinguished from the general anthropological principles.

1. Human ability to know the universe and understand the position of oneself and others: Mulla Sadra believes that foreign objects, in addition to having an external existence, also have another existence in mind (Nowruz, & Babazadeh, 2010). In other words, objects are both external and in the mind due to existence. Hence, Mulla Sadra believes in their correspondence by explaining the existence between the mind and the object. Epistemologically, mental existence requires the study of the formation of science and consciousness in man and man's relationship with the world. In Islamic philosophy, existence and cognition are intertwined and have a common existence (Sattari, 2014).

- Human science has real and credit types and has different ranks and levels: The skeptical truth of human science, in its first division, is divided into "present" and "acquired" science. The acquired knowledge includes three levels of sensory, imaginary and intellectual. Sensory order includes the perception of the face of objects, which occurs with the help of the common sense and the five senses, provided that the object is present. Imaginary order includes perceptual, creative, or imaginary forms whose production occurs without the presence of an object. The rational order includes essential concepts (primary intellects), general concepts (secondary intellects), credit perceptions, basic propositions (axioms), inferential propositions, and arguments and theorems (Alam al-Huda, 2012). Given the different levels of reality, the issue of the division of science can be considered. At the highest or most pervasive level of reality, the whole universe, with all beings, is considered a creature and a sign of God. At this level, there is no difference between beings and they all have a symbolic reality. In Mullah Sadra's epistemology, due to the importance of "known" reality, the true oath or types of sciences are not left out; but the credit division of science according to the specific purposes of man is also possible. From this point of view, science can be divided according to human needs and its usefulness. According to the needs of the first category of human needs (vital needs), the needs of the second category (transcendent needs) have more priority. Human science is a hierarchical reality and its levels are a function of tools, methods; skills and limitations of cognition in man.
- Criterion of the validity of science is its correspondence with the various levels of reality (Nafs al-Amr in Arabic or self): The soul itself contains all the realities of existence and is something beyond the material world (Nowruz, & Babazadeh, 2010). The essence of things in metaphysical theorems is the "metaphysical facts" and in empirical theorems are the

"material facts" and in logical and mathematical theorems are "mental and abstract matters". As in credit, "reliable facts" are the essence of things.

- Science, while discovering from reality (from the known point of view), is the product of creativity and sensual invention (from the point of view of the world): God created the human soul in a way that is capable of creating single forms. In fact, as all the creations of God have been obtained for him, innovative forms are perceptions that are obtained for the soul (Islamic philosophers initially considered science to be the product of the form of impressions in the soul. It is abstract from matter and from the category of nature, and it is not one of the attributes or attributes of the soul) (Marhaba, Vakili & Emani, 2019). The assumption that it corresponds to reality (for the soul) is that the domain of the soul's universality (in acquired science), so that the soul is not endowed with knowledge and science does not dissolve or be reflected in the soul, but the cognitive agent is the creator of science.
- Science, while stable (from a known point of view), has a dynamic feature (from the point of view of the universe): Truth, which is the correspondence of mental contents with reality and the essence of matter, is a permanent and unchangeable thing. In fact, what is temporary and time-bound is external reality, not the conformity of the mental concept with that external reality. Therefore, when we consider science in terms of the world, the nature of its evolution and dynamics becomes apparent. The placement of scholars in different social, intellectual and historical contexts exposes them to different spaces, so that they may face special interests, sensitivities and questions. On the other hand, each person's worldview and value system will lead to different questions - even about a phenomenon (van Drie, & van Boxtel, 2008). ). As a result, the knowledge gained from these searches will be varied. Therefore, at the same time as the stability of science (from the known point of view and its correspondence with the essence of matter), one can believe in the dynamics of science; provided that it does not lead to relativism. The acceptance of stability in science can be summed up by the emergence of three types of change (dynamics): The first type of change is the addition of other knowledge to the previous science. The second type is that the previous science finds a different epistemological value by being in the field of a certain epistemological system. The third type is the refutation or correction of previous knowledge - in the sense that it is sometimes obtained about a cognitive subject which shows that man's previous perception of that subject was incorrect or in his theory and view of an

issue, some points are true and others are false. In other words, this theory needs to be reconstructed, modified and repaired. Such a change in human knowledge is undeniable.

2. Man has several resources and tools for cognition that complement each other: All these tools must be used for a coherent and comprehensive knowledge of the facts and realities of the world, and some of them cannot be given up for the benefit of others (Frank, John & Molnar, 2020). The most important tools are the senses (internal and external), intellect, intuition, revelation and inspiration.

- Senses: Sense is the most pervasive tool of knowledge, which is divided into external and internal groups. The superficial senses provide man with a broad understanding of the natural world. Cognition of the senses is superficial, productive, and partial, and merely reflects the effects and appearances of the things around us, and never penetrates to their depths and essence (Bareiss, Porter & Murray, 1989). On the other hand, sensory perception is limited because it is formed under certain temporal and spatial conditions. The esoteric senses also provide a lot of information. Understanding some of the meanings and mental forms, creating new forms and artistic and poetic creations, and remembering the past information are functions of the esoteric senses.
- Wisdom: Thought is the most basic work of reason to understand general concepts, while the senses and imagination are devoted to small personal matters (Broome, 2013). Reason has many functions or roles, including the analysis and synthesis of general concepts and inference. In this way, what the intellect receives is of the type of acquired sciences, not presence. One of the ways to believe in the unseen world and its origin and resurrection is reason.
- Intuition: The third tool for acquiring knowledge is intuition or revelation, in which a reality is perceived by human beings without intermediaries and in person (Hales, 2004). For this reason, there is no mistake in intuitive knowledge. Universal intuitive cognitions include self-knowledge, knowledge of one's inner abilities (both perceptual and motivational powers) and knowledge of mental states.
- Revelation and inspiration: Revelation in common parlance refers only to prophetic revelation. Although it is specific to the prophets in terms of the source of knowledge, but without a doubt, it is one of the most important methods to acquire knowledge in terms of

communicating the message to the general public. Inspiration is that which is instilled in the hearts of certain saints as God's message and guidance, or given to them by angels.

3. Man, both in opinion and in action, has the ability of reason: Reason is the most important human activity and is essential in all matters such as hearing, seeing, heart observation, producing concepts and propositions, inferences, evaluations, generalizations, references, repeated revisions, certainty and action. Reason in its comprehensive sense includes deciphering the essence and encoding reality in new forms (Harman, 1999). The Qur'an makes the attainment of eternal comfort conditional on faith and action, both of which are based on reason.

4. Human cognition is associated with obstacles and limitations: With the help of various powers, man is able to expand scope of her/his cognition from the tangible to the intangible, and to know both the layers of existence (intuition and unseen) and some matters beyond time and space. At the same time, there are limitations to this human ability. On the one hand, the acquired knowledge of the universe -as a discovery- is done to the extent of the individual's strength and in accordance with her/his intellectual and historical limitations (Davis & Marcus, 2020). Therefore, every human being benefits from this infinite knowledge to the extent of her/his power and talent, effort and intellectual creativity. On the other hand, just as the intellect, given its inherent limitations, she/he is unable to grasp some of the truths of existence (such as understanding the essence of the divine sanctuary and realities of supernatural world). There are also many internal and external obstacles (such as stubbornness, superficiality, fantasy, type of personality, blind imitation, pride and tyranny of opinion) in the way of human understanding. Although it is possible to remove most of these barriers, the existence of some of them makes it impossible to confidently trust most of our sciences, and therefore we must always expose our human knowledge to the criticism and evaluation of others.

According to the content analysis of FRDIES , the extractive codes related to category of "goals of cognition" are: Science of inventing the soul, truth according to the soul, attention to science of soul, matching mental contents with reality, science of perception according to reality, reasoning encryption of facts, unity of divine knowledge and sciences, necessity of returning symbolic sciences to a unit science, cognitive soul, inventor of science, soul perfection, true (certainty) knowledge, mental existence, creation of rational order for philosophy, appeal to the burden of transcendence, and achieving the unity of science. According to the influence of the FRDIES from Mulla Sadra's theory, knowledge is divided into two types of cognition of natural world and

cognition of metaphysics. Based on this, the extracted codes to the category of "domain of cognition" are: Horizon and soul sciences, face science (intuitive), sensory level of objects, upgrading range of human cognition from senses to intangibles, imaginary level of perceptual forms (images), rational level of science outcomes (primary intellects or essential concepts, secondary intellects or secondary concepts), credit perceptions, inferential propositions, arguments and theorems. Since the scope of goals of Mulla Sadra's transcendent wisdom is divided into cognition of the natural and metaphysical world, the extractive codes related to the category of "cognition domain" in the FRDIES are: horizon and soul sciences, presence science, sensory order of objects, enhancing human cognition of sensations To the intangibles, affirmations, imaginary order of perceptual forms (imaginings), rational order of acquired knowledge, credit perceptions, and inferential propositions.

Mulla Sadra defines the truth of science in relation to supernatural. Since in Sadra's wisdom, knowledge is both a matter of existence (not merely a carnal bag) and reason is an existential thing (not merely a carnal power), it is the science of the existential journey that is achieved for the universe to the extent that man seeks help from the active intellect in the way of her/his scientific and intellectual perfection. Mulla Sadra calls the ontological existence of science "Concomitance of science and existence" and considers doubtful degrees for science parallel to existence. Acknowledging the conceptual change of science, he has considered the identities of both as the same. The extractive codes of the FRDIES in the category of "epistemological nature" are: Nature of science from the type of existence, mental existence of science, eternal existence with theoretical reasoning and practical reasoning, and equivalence of science with existence (existential). Mulla Sadra's transcendent wisdom divides science and wisdom into two types: theoretical wisdom and practical wisdom. According to the emphasis of the holy book of Islam "Quran" on theoretical and practical sciences, he introduces both in facilitating life and achieving happiness. The codes extracted from the FRDIES related to "methodology" category are: Face-to-face and acquired knowledge, innovative knowledge, intentional knowledge, valid knowledge according to levels of existence and realities of existence, union of science & known and learning Lifetime. In the FRDIES, the sources of human cognition include revelation (Quran and Atrat), intellect, heart, experience (society, history and nature), but it has introduced revelation as the most important way to guide human beings and reason as the axis of human cognition. The codes extracted from the FRDIES related to the "sources of knowledge" are: Revelation, intellect, heart, and experience. In the transcendent wisdom, Mulla Sadra calls the prophets and the Qur'an "the power of holiness and the bestowal of grace" to guide human beings to happiness, true salvation, and resembles the burden of

transcendence. The extraction codes of the FRDIES in the category of "tools of epistemological basics" are: Inner and outer senses, intellect, intuition, revelation, and inspiration.

Table 1: Epistemological foundations of the FRDIES

Concepts	Categories
Science of inventing the soul, truth according to the soul, matching mental contents with reality, science of perception according to reality, reasoning most important activity in life, deciphering essences, encoding facts, unity of divine knowledge and sciences, necessity of returning symbolic sciences to single science, soul cognitive agent, inventor of science	Goals of Cognition
Horizontal and psychic sciences, face science (intuitive), sensory order of objects, upgrading the range of human cognition from tangible to intangible, affirmations, imaginary rank of perceptual forms (imaginings), rational rank of acquired science, basic propositions or axioms (rationalities), primary intellects or substantive concepts, secondary intellects or general concepts, inferential propositions, arguments and theorems	Domain of Cognition
Nature of science from type of existence, mental existence of science, eternal existence with theoretical and practical reasoning, need for harmony of faith and action, Qur'an emphasizes the harmony of thought and action, coexistence of science with existence, dynamics of science (essential movement of science)	Nature of Cognition
Presence science and acquired science, innovative acquired science, intentional acquired science, self-knowledge of matter, union of science and world, lifelong learning	Method of Cognition
Revelation, intellect, heart, experience	Source of Cognition
Internal and external senses, mind, inspiration and intuition, prophets and Quran	Tool of Cognition

### *Second) Epistemological foundations of rhizomatic approach*

According to Deleuze, rhizome approach is the philosophy of "becoming", multiple, nonlinear, dynamic and in different directions and related to other lines of thought, and it does not know the boundaries and divisions of tree thought. Rhizome approach can break down the spaces and lines of tree approach and reorganize it into a network of interactions. Thought of Rhizome is the end point of a new beginning, or it cannot really be imagined as the beginning and the end. Deleuze rhizome theory expresses horizontal thought. Deleuze paid close attention to the development of horizontal thinking versus vertical thought. He explained the importance of horizontal thought in the best way by using rhizome metaphors versus tree thinking (Imanzadeh, 2008). Deleuze's rhizomatic approach, like a puzzle, is completed with concepts such as "becoming", "denial of metanarratives", "differences", "horizontal relations", "nomadic thought" and "multiplicity". Deleuze believes that philosophy should include itself as a theory of what we do, not a theory of what it is (Marshall, 2006). The word that matters in Deleuze's philosophy is "Immanence" Deleuze's emphasis on the

concept of immanence has an ontological meaning; as discussed in his reading of the philosophy of Spinoza and Nietzsche, as well as in his later works - such as difference and repetition - capitalism and schizophrenia. According to Deleuze, there is only one substance, and therefore everything that exists must be considered in one area and only on one level. The concept of abundance also has a transcendental meaning in Deleuze's thought, and the mere use of a category does not determine and do not materialize (Chyutin, 2021). In fact, the forces that make up everything that exists are always greater than it. According to Deleuze, the relations of forces will be beyond the horizon of the object in every way. In this way, going beyond the horizon and the concept of excess is related to another concept - fluidity and becoming. This philosophy is called becoming philosophy (Sametsky, 2003b).

Deleuze and Guattari claim that the rhizome can help us formulate some principles that describe all plurality beyond the realm of the tree. Thus, the rhizome is not a metaphor for anything else (such as social organizing methods), but a concept that aims at a more fundamental understanding of ontological processes - as dynamic and mutated sets. The most popular sociological use of the rhizome is as a tool for describing the social and technical structure of the Internet, which offers several keys of rhizomatic principles. However, the concept of rhizome can in principle be a useful alternative to the hermeneutic understanding of social processes that eliminates the need to search for "deep meanings. The fluidity or becoming of post-structuralism is the attainment of a new state of "being" in new thoughts, feelings, perceptions, and identities (Reynolds & Webber, 2004). Deleuze's favorite "becoming" is "becoming a minority." There is no such thing as a "majority." Thus, the concept of "becoming" is closely related to the concept of minority, and the transition from a minority to de-territorialization processes represents a qualitative multiplicity. Minority is the potential of any element to deviate from standard or norm of majority. Accordingly, "becoming a minority" is engaging in processes of de-territorialization or deviation from the norm, and conversely, "all becoming" are a minority. Deleuze's idea is associated with de-territorialization and re-territorialization (Elden, 2006). He observes deregulation as a defined process by which anything escapes or distances itself from a given territory. He also abandons the concepts of "unity", "identity", and "transcendence" by proposing the concept of "becoming". Deleuze sought to base his philosophy on "plurality" and "difference" (Deleuze, & Parnet, 2002). For he "becoming" is alienation. In Deleuze's concept, transference and change of life through closed structures leads to differences. Maintaining structures is related to being, while becoming negates the preservation of structures. Therefore, "becoming" is being open to differences. For Deleuze, becoming has neither a beginning nor an end; and neither origin nor destination (Salhshouri & Imanzadeh, 2011).

According to Deleuze "becoming" means directions, paths, inputs and outputs. Becoming is by no means imitation, nor is compliance with a pattern (Deleuze, & Parnet, 2002). He speaks of two types of multiplicity that are directly related to the concept of heterogeneity and assembly. Quantitative multiplicity is a type of multiplicity that is divided by scale inequalities but does not change type of inequality. Deleuze considers the opposition between rhizome and tree multiplicity to be the same as the opposition between numerical and qualitative multiplicity. Tree systems are hierarchical, and their boundaries can be clearly defined and relationship of their components recognized in terms of unchangeable principle of unity. These systems are subject to the principle of organization. Rhizomes are indeterminate objects that are defined externally by a series of demarcations or lines of escape and cause their metamorphosis. It is this de-territorialization and escape lines that are linked to other pastures (Sajjadi, 2008).

In the rhizome view, there is no subject-object relationship. Creatures encounter each other and in this encounter both change. Man is not an identifying subject who recognizes beings in a higher position, but an actor who encounters them and changes with each encounter, acquires new capabilities, and ultimately creates new capacities. Incomplete, continuous objects interrupted by other incomplete objects. These, in turn, produce other currents in such a way that each object requires the continuity of a current and each current requires the fragmentation of the object (Deleuze & Guattari, (1994). A concept is, in the first place, a whole that transcends its fragmented and disjointed components. Each concept is composed of components, each of which has its own background; a background that represents its capacity of realizing new possibilities. Each concept is linked to other specific concepts and backgrounds. So every concept is at the heart of a network of relationships. At the same time, the process of becoming is at heart of this intertwined network. Although the concept is surrounded by other concepts, but in the process of becoming, a large number of appropriate concepts are selected and put together. This process leads to transformation and evolution of past concepts and formation of new concepts. Concepts move toward an unknown destination and cause ruptures, transformations, or mutations (Deleuze, 1994). Based on these three general characteristics of the concept, i.e. generality, background and becoming, Deleuze & Guattari, considered four characteristics for each concept: Interrelationship, coherence, point of intersection & accumulation, and non-discourse (Zarei, 2011).

According to Deleuze, the teaching of signs and concepts should be included in the education system. He believes that the philosopher's job is to create new concepts. Instead of reflecting on the

nature of objects and phenomena, the philosopher must invent new concepts. According to him, concepts, perceptions and effects are the three sides of a triangle that form each other and act in the process of thought (Sametsky, 2003a). Deleuze refers to man as a machine of desire. This machine has two important features: First, it blurs the line between human and non-human. In Deleuze's view, every creature (even non-human) is a desire-driven machine. Second, beings are desire-oriented, meaning that beings are not merely passive beings that are completely in control of other forces, but they desire and seek to experience new things. People want to experience. Deleuze's empiricism has two characteristics: First, abstract and abstract things should not be considered explanatory, but should be interpreted. Second, the goal of human beings is not to discover eternal and eternal things, but to understand the conditions and situations that arise in new phenomena. Deleuze-Guattari ontology is also a kind of ontology of desire-driven machines; machines are everywhere and working non-stop; they are producers (Deleuze & Guattari, 1994). The machine that Deleuze and Guattari speak of refers to the pairing of seemingly heterogeneous components that do not seek to achieve an external purpose or function. Their sole purpose is to match so that a machine - organ to machine - source is of the bond. One releases the compensation and the other cuts off the flow. Desire -oriented machines are paired machines, have a coupling rule or system, and are always machines paired with another machine. Matching that does not remain in the body functions.

Production-oriented points out that the existence of a desire-driven machine is not simply a potential realization. The Aristotelian world cannot contain the production of something new and new desire. This world is the world of power and action, which ultimately -and in the best case-leads to reproduction of things. Conversely, for Deleuze, desire-driven machines seek to create and produce, and to experience new things and never remain trapped in previous frameworks and propositions (Sharifzadeh & Zamani Jamshidi, 2018). Deleuze's philosophy is a philosophy of confrontation. For him, philosophy is the art of function and assembly, the art of always being in the middle, the art of confrontation and becoming. By rejecting reason - as the only tool of cognition - and rejection of truth and external reality, poststructuralists conclude that we have now reached a crisis of representation. Representation in the literal sense means something that replaces something else and symbolizes or reflects it. Now, instead of acting on an object or subject, one can think about its successor (Babaei, 1995). According to the postmodernists, we have now reached the end of absolutism, totalitarianism, generalism, rationalism, and scientism. Therefore, it is not possible to consider a single and coherent basis and origin for human knowledge - and universal and uniform methods - to achieve the truth (Sajjadi, 2008). In this school, we can no longer name

the definite fixed principles of the other state, because with the negation of metaphysics, the principle of representation of reality also suffers a crisis. In this way, the notion of the existence of external reality and its cognition is shaken. If communicationism emphasizes learning and knowledge that is distributed and outside the mind, intellect - which until now were introduced as important tool for knowing and explaining the truth - can no longer be reliable and definite tool for acquiring knowledge. Also, man - as a rational subject - is no longer at the center of the world, but he, like other elements, is placed in the text and plays an active role in the construction of truth. In the foundations of post-structuralism, the ancient hierarchy and unity, identity and duality gave way to multiplicity, diversity and multiplicity. Therefore, the negation of hierarchy and preference leads to the negation of dualism and duality (Deleuze, 1994).

Table 2: Epistemological foundations of rhizomatic approach

Concepts	Categories
Man; Desire-oriented machine, subject-object comparison, disorder in knowledge, emphasis on differences, nomad-oriented thought, a priori requirements, negation of metanarratives, multiplicity without unity, emphasis on horizontal knowledge, multiplicity, relativism and skepticism, denial of fixed structures, failure to discover eternal things, rejection of transcendence.	Goals of Cognition
Imaginations, concepts, impressions.	Domain of Cognition
Communicative, fluid, networked, dynamic	Nature of Cognition
Confronted-oriented, de-territorialization, Metamorphosis, Distributive Representation, relation between science and scientist, Assembling and Adaptability, non-organism	Method of Cognition
Experimental, communicative, semantic, avoidance of borrowing	Source of Cognition
External senses (external), internal senses (esoteric), desire, network	Tool of Cognition

### B) Interpretation

This section describes the data related to the interpretation step according to the winning approach:

Sadrudin Mohammad Shirazi - known as Mulla Sadra and Sadr al-Mutallahian (1571-1635) established his philosophical system using rational and narrative methods and intuition. Understanding his school requires knowledge of the socio-cultural context in which Mulla Sadra lived. Mulla Sadra's important role is to reduce and deliver a strong and fundamental philosophy and religion to mysticism. In other words, he has placed mysticism in a container and has dealt with philosophy and religion, and then presented a mystical interpretation of religion and philosophy (Rahmati, & Osooli, 2019). Therefore, it is well known that Mulla Sadra combined philosophy and religion with mysticism. He took the philosophy of Aristotle, al-Farabi, and Bu'ali Sina as the main

subject of his philosophy and maneuvered in it. In other words, the starting point of his discussion is the revived Peripatetic philosophy in the Islamic world, although it eventually reaches the mysticism of Ibn Arabi and makes philosophy a mystical form.

He does this in an Iranian cultural-epistemological context, namely Iranian Sufism and Mysticism. With this combination and synthesis, Mulla Sadra reached another synthesis that was the synthesis of Iranian in the modern era (after Safavid); that is, integrating post-Islamic Iranian culture in the epistemological dimension. The central point of Mulla Sadra's theory is the unity of existence which is derived from mysticism. This unity of existence can be the unification of the actions of the people who want to move in one direction and build a new State with the official Shiite religion. Hence, Mulla Sadra tried to interpret the Qur'an and Atrat - according to the theory of the unity of existence - to extract a single meaning from religion that is unifying. On this basis, Mulla Sadra was able to link the past heritage of Iran before and after Islam - that was, Greek Sufism and its Iranian interpretation with Ibn Arabi's argumentative mysticism (as a foreign epistemological heritage) and the Shiite religion – to create a new epistemological approach and culture. Thus, Mulla Sadra was the collector of Iran's multiple internal and external heritages in order to draw a new era for Iran.

On the other hand, to understand rhizomatic theory, one must refer to its historical and social sources. As the first generation of theorists, Friedrich Nietzsche and Martin Heidegger, the founding philosophers of the poststructuralist movement, influenced the ideas and thoughts of Derrida, Foucault, Lyotard, Deleuze, Irigaray, Lacan, and Baudrillard in various fields of knowledge, such as anthropology, sociology, and psychoanalysis (Peters, 2000). One of the most obvious actions of postmodern thinkers and philosophers is to attack the concept of Cartesian-Kantian subject. Hence, the main feature in modern philosophy is subjectivity. Descartes coined the term into modern philosophy with the invention of the thinking mind, or cogito. Later philosophical schools used the same concept, with a slight change in its definition, as the basis of their epistemology. But postmodern philosophers decentralize themselves or the Cartesian or Kantian mind. In postmodernism, this decentralization of man is referred to as the "death of the subject." It is also referred to in literature as the "death of the author." Of course, irrationality or anti-rationalism is not limited to the school of postmodernism. This phenomenon has existed from the time of the Romantics to the existentialists and then reached the postmodernists (Cahoone, 2008). Nietzsche's attack on rationalism had a profound effect on Heidegger, Derrida, Deleuze, Foucault, Lyotard, and other postmodern theorists. According to the postmodernist view, there is no such thing as

objective reality and reality independent of human society, and everything that is made and paid for by human society and linguistic practices. Hence, postmodernism explicitly rejects the theory of correspondence of truth, claiming that truth is a linguistic creature that expresses the feelings, emotions, values, and customs of any linguistic society. The thought of the French philosopher Gilles Deleuze (1925-1987), like that of Mulla Sadra, is accompanied by a transformation. Although Mulla Sadra's appearance was essential and Deleuze's appearance without limbs; Mulla Sadra directed his essence to a direction that represented the vital identity of the world around him- that all beings have existential and vital parts that are accompanied by an essential dynamics. Deleuze's appearance was a disembodied appearance and mating based on no distinction between subject and object. Therefore, his becoming gives man the identity of a desire-driven machine that has no special dependence on natural and human laws.

### *C) Juxtaposition*

At this stage, the researchers tried to provide necessary criteria for comparison. Comparative analysis is performed by combining the findings of previous two steps. This step involves combining goals, scope, nature, resources, and tools of cognition.

#### *1. Goals of Cognition*

According to Mulla Sadra's philosophy the most important goals of cognition is perfection of the soul and closeness to God, while the poststructuralist philosophy avoids any metanarrative. In this sense, there are no similarities between these two philosophical approaches. In other words, there is a huge gap between these two epistemological foundations. The FRDIES follows a causal system - with linear and hierarchical aspects - to become an existential being and reach the level of intuition, influenced by the transcendent wisdom of Mulla Sadra. Conversely, the basics of rhizomatic knowledge are a system of knowledge distributed with a nonlinear approach and a disembodied appearance so that the subject does not take precedence over the object. The rhizomatic approach called human being as a "desire-driven machine", accepts plurality and multiplicity which is derived from the post-structuralism philosophical system.

#### *2. Nature of Cognition*

Most important factor associated with nature of recognition in FRDIES is that, despite conceptual inconsistency between existence and science, its identity is two angles. In terms of Mulla

Sadra, the origin and main issue of science is the creator, which is at the highest level. The nature of recognition in the rhizome is communication, fluid and network approach.

### *3. Method of Cognition*

The most important factor related to method of cognition in FRDIES is face-to-face and acquired knowledge in which theoretical intellect is superior to practical intellect. The method of cognition in rhizomatic approach is confronted-oriented, territorialization, and minority, and does not reflect the superiority of theoretical reason over practical reason.

### *4. Resources of Cognitive*

Most important factor related to sources of knowledge in FRDIES is revelation, intellect, heart, and experience. The source of revelation is word of God which has been revealed to the prophets and is the highest level of knowledge. In addition, reason is central element of sources of knowledge in Islam. The basics of knowledge in rhizomatic are experimental, analytical, communicative, free of borrowing and influenced by the ecosystem.

### *5. Tools of Cognition*

The most important tools of cognition in terms of the philosophy governing the FRDIES include the inner and outer senses, mind, inspiration and intuition, words of the prophets and heavenly book of "Quran". The tool of knowledge in the rhizomatic approach, in addition to the external senses and the esoteric senses are desire and network.

### *D) Comparison*

At this stage, researchers have compared the basics of the rhizomatic approach with the epistemological foundations of the FRDIES (Mulla Sadra theory).

Table 3: Factors affecting epistemological foundations of FRDIES and Rhizomatic approach

<b>Epistemological foundations/ Factors</b>	<b>Components</b>	<b>FRDIES</b>	<b>Rhizomatic approach</b>
Goals	Human being	Cognitive subject	Lack of centrality of cognitive subject
	Discipline	Belief in order	Lack of belief in order
	Knowledge	Certain knowledge	Relative and multiple knowledge
	Science	Unity of divine and worldly sciences	Multiplicity of worldly sciences
	Reason	Pure rationality	Anti-rational
	Meta-narration	Accept the supernatural and the metanarratives	Denial of metanarratives
	Becoming	Existential movement	Non-organized entity
Domain	Affirmations	Feelings	Feelings
	Imaginations	Imaginations	Imaginations
	Reasons	Axioms, Substantive Concepts, General Concepts, Credit Perceptions, Inferential Propositions, Argument, Theorems	Axioms, concepts
	Impacts	rejection of Absolute influence	Acceptance of Impact (Differences)
Nature	Supernatural	Acceptance of existential nature	Rejection of existential nature
	Natural	Rejection of nature of communication	Acceptance of communicative and fluid nature
Method	Science	Presence and product knowledge	Confronted-oriented science
Source	Supernatural	Revelation, sense, intellect	Refusal to accept supernatural resources
	Natural	Experiment	Experimental and communication resources
Tool	Supernatural	Heavenly Book, Inspiration and Intuition, Mind	Rejection of supernatural tools
	Natural	Outward and inward senses	External and esoteric senses, desires, network

Table 4: Similarities and differences between the epistemological foundations of FRDIES and Rhizomatic approach

<b>Epistemological foundations/ Factors</b>	<b>Components</b>	<b>FRDIES</b>	<b>Rhizomatic approach</b>
Goals	Human	*	-
	Discipline	*	-
	Certainty of knowledge	*	-
	Unity of Science	*	-
	Reasoning	*	-
	Mea-narration	*	-
	Existential movement	*	-
	Non-organized entity	-	*
Domain	Affirmations	*	*
	Imaginations	*	*
	Reasons	*	*
	Impacts	-	*
Nature	Existential	*	-
	Communicational	-	*
Method	Presence Science	*	-
	Productive Science	*	*
	Confronted Science	-	*
Source	Revelation	*	-
	Reason	*	-
	Sense	*	-
	Experience	*	*
	Communication	-	*
Tool	Heavenly books and prophets	*	-
	Mind	*	-
	Inspiration and intuition	*	-
	Senses	*	*
	Network	-	*

The data in Table 4 show 27 features that can be used to measure the similarities and differences between Mulla Sadra theory and rhizomatic theory in different dimensions of knowledge. The results indicate that there are similarities between the two theories in 6 features. The data in Table 4 show 27 features that can be used to measure the similarities and differences between Mulla Sadra theory and rhizomatic theory in different dimensions of knowledge. The results indicate that there are similarities between the two theories in 6 features. This also indicates that between the two theories in more than 20 epistemological features.

#### **4. Conclusion**

Although education is one of the most important priorities in all countries of the world nowadays, without a proper understanding of the philosophical and epistemological foundations of the educational system, it is not possible to develop appropriate its goals, principles and methods. The establishment of the Islamic Republic during the last four decades in Iran and the increasing influence of religion caused all the elements of the educational system, including its upstream documents. However, rapid social developments prevent educational systems from considering only a philosophical approach. At present, the Iran's educational system is strongly influenced by Mulla Sadra's philosophical approach. The purpose of this study is to investigate main similarities and differences between the epistemological foundations of upstream document of "FRDIES" and the epistemological foundations of the rhizomatic approach. The first research finding indicates the different role of "religion" in shaping the epistemological foundations of the two approaches. While the rhizomatic approach is based on a secular system and the negation of metanarratives, Iran's educational system is highly religious. The second finding is related to man and his pivotal role in acquiring knowledge. In Mulla Sadra's system, although man is an innovator, he is dependent on the supernatural force, namely God, on the path to perfection. Also, after revelation, in Mulla Sadra's theory, "intuition" is one of the ways to acquire knowledge that considers the growth of human existence. But under the influence of post-structuralist philosophy, the rhizomatic approach does not believe in the two-dimensionality of human existence - soul and body - and proceeds to the same stage of subject and object and "man" as part of the text. This approach also believes in the principle of knowledge-learner interaction and refers to man as a desire-driven machine. Therefore, contrary to Mulla Sadra's theory, the rhizomatic approach denies the existence of any sacred force - such as revelation - and values the connection and interaction of human beings in social networks to gain knowledge.

Another finding of the research is that while education of young generation in today's world is largely done through new changes in technology and information, the role of "interaction and communication" is not specifically mentioned in the "FRDIES". Conversely, the rhizomatic approach to modern times is associated with a positive attitude and considers any change as the cause of the expansion and formation of the "network" and accepts it as a rhizome. This view pays more attention to the interactive role of social factors at both national and international levels, while in the Iran's education system little attention is paid to the role of "network" and international

relations. All this happened at the age of globalization, when the factor of "communication" in education has become a necessary and inevitable variable. Another finding is the role of "becoming" in both philosophical approaches, although their types are different. In FRDIES, based on the principle of Mulla Sadra's existence and substantive movement, integration is considered, but in the principles of rhizomatic, non-acceptance of organism is acceptable. In terms of the nature of science, there is also a difference of opinion between Mulla Sadra's approach and rhizomatics. In Mulla Sadra's thought, real science originates from revelation, while in rhizomatic epistemological foundations; science has a communicative and fluid nature.

The research findings draw our attention to several key points: First, the lack of attention of Iran education policymakers to the realities of modern life is due to the extreme emphasis on role of "religion". This issue has created a huge gap between formal education and the real behavior of learners in social life. The findings of Iranian researchers revealed that under the influence of present epistemological principles, the acceptance of modern life values - such as respect for different cultures, understanding social responsibility, respect for law & citizenship, social participation and environmental concerns - have not received much attention in the Iran education system. From this perspective, knowledge of the epistemological foundations of new philosophical approaches such as rhizomatics can contain important messages for the Iran's education system. Paying more attention to the necessity of network learning in educational spaces and familiarity with modern philosophical perspectives can provide a suitable platform for researchers to critically deal with the philosophical foundations of the Iran educational system. Localizing the epistemological foundations of the rhizomatic approach and implementing it through the FRDIES can help to modernize and update learning approaches and change the teaching-learning goals, nature, methods, resources and tools. In this case, a suitable model namely "hybrid pedagogy" can be used, which is a mixture of the epistemological foundations of the FRDIES and rhizomatic approach.

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