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The Impact of Educating Astronomy in Everyday Life

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Abstract: Astronomy is one of the few scientific fields that interacts directly with society. This research has been done by the attitude which to prepare a spacious guidance curriculum for astronomy educating in secondary educational level. So, the present research has a developmental goal and methodologically it has been done by diacritical analytical method. And according to the content it has been done by the culture and civilization of Islam and proportionate to the daily needs of the modern world science to be able to note about the future scientifically, economical and social needs. Clifford Geertz's interpretive theory is the theoretical framework of this research. Structural, functional, semiotics and semantics of the studied phenomena have superior importance for this theory. We would be faced with these four elements on the cultural, religious and educational level in this study too. So, the present study tries to interpret the commercial situation of astronomy, religious culture and curriculum. For data gathering we used library and documental technique in this research. The used documents include finished projects reports, articles, books, theses, national curriculum and final basic evolution of educational system in Islamic republic of Iran. Meanwhile the most important concluded findings are the creation of the preparing the needed science for the compilation of astronomy affect everyday life with the other curriculum.

Key words: Astronomy educating, everyday life, the elements of curriculum guidance, secondary, Iran

INTRODUCTION

Throughout history humans have looked to the sky to navigate the vast oceans, to decide when to plant their crops and to answer questions of where we came from and how we got here. It is a discipline that opens our eyes, gives context to our place in the Universe and that can reshape how we see the world. When Copernicus claimed that Earth was not the centre of the Universe, it triggered a revolution. A revolution through which religion, science and society had to adapt to this new world view.

Astronomy has always had a significant impact on our world view. Early cultures identified celestial objects with the gods and took their movements across the sky as prophecies of what was to come. We would now call this astrology, far removed from the hard facts and expensive instruments of today's astronomy butt there are still hints of this history in modern astronomy. Take, for example, the names of the constellations: Andromeda, the chained maiden of Greek mythology, or Perseus, the demi-god who saved her.

Now as our understanding of the world progresses, we find ourselves and our view of the world even more entwined with the stars. The discovery that the basic elements that we find in stars and the gas and dust around them, are the same elements that make up our bodies has further deepened the connection between us and the cosmos. This connection touches our lives and the awe it inspires is perhaps the reason that the beautiful images astronomy provides us with are so popular in today's culture.

There are still many unanswered questions in astronomy. Current research is struggling to understand questions like: "How old are we?", "What is the fate of the Universe?" and possibly the most interesting: "How unique is the Universe and could a slightly different Universe ever have supported life?" But astronomy is also breaking new records every day, establishing the furthest distances, most massive objects, highest temperatures and most violent explosions. Pursuing these questions is a fundamental part of being human, yet in today's world it has become increasingly important to be able to justify the pursuit of the answers.

Although, we live in a world faced with the many immediate problems of hunger, poverty, energy and global warming, we argue that astronomy has long term benefits that are equally as important to a civilized society. Several studies have told us that investing in science education, research and technology provides a great return, not only economically butt culturally and indirectly for the population in general and has helped countries to face and overcome crises. The scientific and technological development of a country or region is closely linked to its human development index, a statistic that is a measure of life expectancy, education and income.

There are other works that have contributed to answering the question "Why is astronomy important?" More recently, Oguz and Okulu (2011) wrote an article outlining the recent technological advances that we can thank astronomy for, such as GPS, medical imaging and wireless internet. In defence of radio astronomy, Dave in Finley states, "in sum astronomy has been a cornerstone of technological progress throughout history has much to contribute in the future and offers all humans a fundamental sense of our place in an unimaginably vast and exciting universe".

Astronomy and related fields are at the forefront of science and technology; answering fundamental questions and driving innovation. It is for this reason that the International Astronomical Union's (IAU) strategic plan for 2010-2020 has three main areas of focus: technology and skills; science and research and culture and society.

Although, "blue-skies research" like astronomy rarely contributes directly with tangible outcomes on a short time scale, the pursuit of this research requires cutting-edge technology and methods that can on a longer time scale, through their broader application make a difference.

A wealth of examples show how the study of astronomy contributes to technology, economy and society by constantly pushing for instruments processes and software that are beyond our current capabilities. The fruits of scientific and technological development in astronomy, especially in areas such as optics and electronics have become essential to our day-to-day life, with applications such as personal computers, communication satellites, mobile phones, Global Positioning Systems, solar panels and Magnetic Resonance Imaging (MRI) scanners.

Several reports in the US (National Research Council, 2010) and Europe (Bode, 2012) indicate that the major contributions of astronomy are not just the technological and medical applications butt a unique perspective that extends our horizons and helps us discover the grandeur of the Universe and our place within it. On a more pressing level astronomy helps us study how to prolong the survival of our species. For example, it is critical to study the Sun's influence on Earth's climate and how it will affect weather, water levels, etc. Only the study of the Sun and other stars can help us to understand these processes in their entirety. In addition, mapping the movement of all the objects in our Solar System, allows us to predict the potential threats to our planet from space.

Educating astronomy: Shekarbaghani *et al*. (2008) on the feasibility of astronomy education based on Islamic culture and civilization in general and secondary education, favorable conditions for the study of astronomy education, the situation in the various sectors of education, ground for the implementation of the astronomy education in all countries, the global challenges and astronomy education program examined. According to the findings of this study, the best method for the teaching of astronomy in schools is to utilizing various departments of the Ministry of Education, including Institute for the Intellectual Development of Children and Young Adults and research centre where should be equip with the equipment and tools which are necessary for Astronomy education to the students. Using the capabilities of the private sector, including astronomy Amateur astronomy Association and the Association for the training courses will help you in the shortest possible time for astronomical education to the students of the country. In survey research facilities, student research center we found that there are many films on astronomy education, replica, posters, maps and astronomical atlas of the night sky are available which many of them taken and distributed by amateur astronomy associations.

ZuhtuOkulu show that applied educating of Astronomy in civilization life is one of the important goals of it. It means that this process could be used for identifying Astronomy the goals of Astronomy education. It means that it is the answer of the other question in this research.

Krumenaker (2009), looked at fully independent, self-contained astronomy courses available to students in grades 9-12 with the mixed-methods study. Therefore, courses, such as physics or earth science, that contain some astronomy units were not considered in this study. The data came from high school astronomy teachers via a survey available to them on a Webpage and as a Word file. The study mirrored but greatly enlarged the scope of the Sadler study. Quantitative and categorical questions included diverse topics such as instructors' back-grounds, planetarium and telescope availability, financial support, course content, student demographics, school AYP status and other items. Also included were open-ended survey questions, such as requests for recommendations about ways to go about starting a course and these responses were coded and treated with qualitative or quasi-quantitative analyses.

Alvandi (2010) studied the evolution of astronomy education in Iran from Dar Al fonon up to now. Findings from this study indicate that: he population of the study consisted of 1090 volumes of books on the topics of physics, geography, geology and geometry were. Of these, 363 were selected for the sample as a sample of the 7 as it was not available in the archives of 356 cases was

analyzed. In addition, the entire collection of books at Dar-Al fonon school, also were added, including 15 titles Board, 7 titles in Physics, 4 as Geometry, 2 as Geography and 2 as knowledge of the earth (Geology) with the description of the sample population consisted of this study was 386 titles. The present board of textbooks titled no part of it may not be considered. These studies revealed that the titles of textbooks in the discussion on astronomy education firstly depended on the largest share of physics and secondly geography in Iran.

Shekarbaghani (2010) did a Comparative study of Astronomy education between Iran and the target countries to study astronomy education programs in order to gets in various and appropriate benchmarks in the field provided try to cover. This is the stuff that goes on the findings of the final report of the project.

The United States of America is one of the target countries in this comparative study. In the United States, in the context of science education standards, programs intended for astronomy education in school. It is clearly defined that what kind of educational contents should be understood by students in these standards and what kind of process skills in the different age levels determined to be learned. These standards allow educational system to use the content of astrophysics and astronomy to improve the conception and learning of the students.

One of the other countries in this comparative study for astronomy education is United Kingdom. The Curriculum of the school pay attention to the students' experts so at the first of per subject there are some activities for training of experts, knowledge and conception for the use of science and then these experts and awareness's articulated in separate contents.

Turkish is one of the other choose countries for this comparative study about Astronomy education. By educational re-organization for Turkish in 2005-2006, the Intermediate level of education increased from 3 years to four. In this framework intermediate level is related to 14-17 years old students. The goals of intermediate level in Turkish are "to present the public culture to the students, to make the students familiar with the individual and societal problems, Problem solving education, increase their awareness for getting self steam for their participation in the socio-cultural development in country, prepare students for higher and expert education and their life and business according to their interests and experts".

China is the other member of this comparative study. The knowledge of astronomy has a rapid development in this country since 1977 thus in this country mass media like radio and television uses like heavens showers since the knowledge of astronomy to be known and famous. Astronomy present as physics and Geography in Chinese high schools. In the last year of high school a subject like the knowledge of the earth and the sky combined in Geography.

Our comparative study has anther members in the name of Malaysia. There is no separate lesson as Astronomy in this country curriculum but most of this lesson content is presented in Physics. Of course Geography does it in its Curriculum too. Of course in Malaysian school Curriculum Quality is more important than quantity.

Indian educational system does not have a special curriculum for Astronomy education. Astronomical subjects present in physics at grade 11 and 12 at high school too in order to create a suitable conception about the nature and material. Specifically some lessons Astronomical educational lessons have been presented in physic book of grade 11 at high school.

Since in the school of our country there is no effort to present Astronomy education. Astronomy curriculum education limitedly present at secondary school. Most of the teachers are exported in one of the main branch of natural sciences so they are not able to teach the subjects of Astronomy curriculum (Shekarbaghani, 2014; Casey and Slater, 2002).

Ahmadi (2011) did the survey of science, physics, geography, geology and mathematic according to the general and intermediate level and gave a suitable framework. At first the sign of Astronomy education for general and intermediate level according to Iranian culture has been surveyed in this research. Then the suitable framework according to the educational level has been created. We can use it for examining the structure and organizing the content of the Astronomy education. At mean it is the answer of one of the questions of the present research.

In the past few years, the Philippines have been gradually developing its research and educational capabilities in astronomy and astrophysics. In terms of astronomy development, it is still lagging behind several neighboring Southeast Asian countries such as Indonesia, Thailand and Malaysia while it is advanced with respect to several others. One of the main issues hampering progress is the scarcity of trained professional Filipino astronomers as well as long-term visions for astronomy development. Here, we will be presenting an overview of astronomy education and research in the country. We will discuss the history and current status of astronomy in the Philippines, including all levels of education, outreach and awareness activities as well as potential areas for research and collaborations. We also discuss issues that need to be addressed to ensure sustainable astronomy development in the Philippines.

Finally, we discuss several ongoing and future programs aimed at promoting astronomy research and education. In essence, the work is a precursor of a possible white paper which we envision to submit to the Department of Science and Technology (DOST) in the near future, with which we aim to further convince the authorities of the importance of astrophysics. With the support of the International Astronomical Union (IAU), this may eventually lead to the creation of a separate astronomy agency in the Philippines (Sese and Kouwenhoven, 2012).

The past several years have presented the astronomy education research community with a host of foundational research dissertations in the teaching and learning of astronomy. These Ph.D candidates have been studying the impact of instructional innovations on student learning and systematically validating astronomy learning assessment instruments (Slater, 2008).

For over 40 years, the international astronomy education community has given its attention to cataloging the substantial body of "misconceptions" in individual's thinking about astronomy and to addressing the consequences of those misconceptions in the science classroom. Despite the tremendous amount of effort given to researching and disseminating information related to misconceptions and the development of a theory of conceptual change to mitigate misconceptions, progress continues to be less than satisfying. An analysis of the literature and our own research has motivated the CAPER Center for Astronomy and Physics Education Research to advance a new model that allowing us to operate on student's astronomical learning difficulties in a more fruitful manner. Previously, much of the field's work binned erroneous student thinking into a single construct and from that basis, curriculum developers and instructors addressed student misconceptions with a single instructional strategy. In contrast this model suggests that "misconceptions" are a mixture of at least four learning barriers: incorrect factual information, inappropriately applied mental algorithms (e.g., phenomenological primitives), insufficient cognitive structures (e.g., spatial reasoning) and affective/emotional difficulties. Each of these types of barriers should be addressed with an appropriately designed instructional strategy. Initial applications of this model to learning problems in astronomy and the space sciences have been fruitful, suggesting that an effort towards categorizing persistent learning difficulties in astronomy beyond the level of "misconceptions" may allow our community to craft tailored and more effective learning experiences for our students and the general public (Slater and Slater, 2015).

Research questions: According to the mentioned goals the mentioned plan would answer to the following questions:

- What are the goals of astronomy education affect everyday life?
- What is the total guidance of the Astronomy education affect everyday life?

MATERIALS AND METHODS

Documentary method has been used for data gathering in present research. Particularly, superiority finished reports of projects, papers, books, thesis, international documents and plans have been used in this research. Some of the used resources are as follow:

- English and Persian books about the curriculation and education of Astronomy. Data sites about education and curriculum of Astronomy
- Informational sites about the curriculum and education of Astronomy is needed
- Educational books of schools about Astronomy measuring
- Superior documents include the fundamental evolution documentary of education in IRI. And national educational curriculum of IRI
- National reports of universal reports in curriculum and education of Astronomy
- The results of four finished researches with the belowcontents(which in fact the present research is related to them)
- Feasibility measuringof Astronomy education founded on the Islamic culture and civilization in general and intermediate educational level
- The comparative study of Astronomy education Islamic republic and the goals countries are needed too

The survey and reinvestigation of the educational books like science, geography, geology and mathematics in the sight of the education of Astronomy and to present the appropriate framework.

Survey the evolutional process of Astronomy education from Dar Al-Fonon has been studied up to now. We got the opinion of the expert's opinion about the elements of Astronomy education and the completed the needed guidance for astronomy education. In fact the questions of the research have been answered by description, analysis and interpretation of the named documentations. The prepared educational guidance for the education of Astronomy has been validated by the

questionnaire which is filled by the teachers of physics and the other various lessons which are related to Astronomy (Shekar Baghani, 2014).

The guidance of the curriculum and education of astronomy framework: The framework of the Astronomy curriculum for intermediate level includes the books which are got from the literature of the research. This framework shows the theoretical elements of curriculum. It is framework shows the general directions of curriculum for astronomy and it is a source for guidance, preparation and doing the curriculum of Astronomy for intermediate levels. Teaching plan and educational designation for education of Astronomy has been prepared according to Islamic culture and civilization. We will present a sample of designated lessons of astronomy. Also we prepared this issue based on the Islamic culture and civilization and it is related to the concepts of the geography book of the first grade of intermediate course.

- The name of the lesson: Astronomy
- Lesson: geography
- Educational concepts: keble (direction to which Mohammedans turn in praying) and Keble finding
- The goals of lesson:
- Pay attention to the sky and investigating in it at night
- How to looks at the sky and register his observations?
- Pay attention to shinning direction of the sun for kibble finding
- Teaching time: 100 minutes during a sunny day (teaching expert 20': learning activities 50' assignment assigning asking and answering questions 10 min evaluating 10')
- Addressers: the students of grade one in intermediate level, girls/boys
- Activity format: individual and collective (students divide to different groups with five members and start their activity. A group will inform for the students who are interested in individual activities)

Initiation of teaching skills (laying the groundwork and establish the learning situation): this skill begins with questioning and answering. Teacher asks his/her students about the class about the Keble situations in different locations and then makes a conclusion for these answers. After that the student should be driven to school courtyard and by doing collective and individual activities learn how to placing the Keble direction.

The validation of the curriculaion of Astronomy guidance: Researcher build questioner (consist of thirteen closed questions) has been used for validation of the gained elements. Realities of this questioner confirmed by contently validate which is done by the subjective experts consulting group.

At first a brief quality of surveyed elements which are needed to assembling the suggested curriculum of astronomy would be sent for the selected teachers (before they answer to the questions, for their familiarity with the elements of the suggested guidance curriculum). In fact we tried to account the validation of these elements validations by this.

Then we asked them to study the curriculum carefully and after that to answer the questions. For doing this we gave 50 questioners to 50 teachers.

We gathered all 50 questioners. Thus, the final questioner prepared by the teacher's answers to the questions (by using the analyzing method for the presented answers according to the guidance of curriculum). For surveying the reliability of the questions we use Kronbakh coefficient equal to 0.708. The general curriculum of astronomy had been prepared by this way:

- To stand the theoretical fundamental and conceptual framework of the astronomy curriculum attitudes and the universal experiences for the education of Astronomy
- Gathering the needed data in the area of the guidance of the curriculum of Astronomy and to study the previous plans which has been done in IRI
- Adding up documental the field data and to survey prerequisite for preparing the general curriculum for education of astronomy and to survey the upper documents like the document of national curriculum of natural sciences which includes Astronomy; and to answer to the questions of the research for assigning philosophy, goals and attitudes of Astronomy education
- Assigning the offering arguments for entrance of the Astronomical subjects in educational books
- Survey of primary plan for the guidance of the curriculum of Astronomy and gaining the deliberative views of the subjective experts
- To present suggested guidance of the curriculum of Astronomy for secondary schools

Finding the validity of suggested guidance for the curriculum of Astronomy and at last the founding's of the research added up and the final result of these results presented.

Table 1:

Elements/Grade	Second three years of secondary school	First years of secondary school
Attitude of suggested curriculum	Combination of curriculum attitudes as technology and cognitive, development and development of self-dehiscence and monotheism naturism	Combination of cognitive development attitudes and development of self-dehiscence and monotheism naturism
The goals of curriculum guidance	Recognition of existence phenomena in our surrounding world	The students familiarity with their surrounding world as:
	Method of the other planet formation	Quality of month circulation around the earth
	Quality of the moon and the satellite of other planet	Earth circulation around the sun
	Replacement of centuries on the ground, mention the Astronomical distances	Existence of Round-the-clock
	The role of gravity in planet and satellite movement	Coming into eclipse of the sun and Luna eclipse
	Familiarity with some related cases to religious rules for Muslim	History of the earth existence
	Acquisition to monotheism world view	Acquaintance with some cases of religious injunctions for Muslims like:
	Assigning the beginning of lunar month	Superiority of monotheism world view
	Assigning finishing of lunar month and ….	Assigning the rising and setting of the sun
		Kiblah finding and …
Teaching method	The possessive accomplishment and usage of different skills, specially interpretation, accounting and modeling	The possessive accomplishment and usage of data gathering skills, use of data resources
Evaluation methods	Interpretation of researches and experiments by using accounting skills and modeling along side with accounting question and practical test by using of different kinds of telescope and virtual modeling	Making illustrative and embody of solar system based on scales, oral and sometimes descriptive
Structure and organization of the content	Polishing the subjects from inductive to deductive, enter the content of astronomy to physics, geography, history, geometry, geology and math books	Polishing the subjects from inductive to deductive, enter the content of Astronomy to physics, geography, history, social science, math and geometry books
Educational assistance	Kinds of telescopes	Astronomical camera
	Computer assimilations	Telescope
	Computer instruments	Computer assimilation
	Celestial shower	Celestial shower
	Astronomical modeling	

Validated guidance: The guidance of curriculum for Astronomy in secondary schools which has been validated by clear-sighted person's and expert's agreeing, opposed, recommendations and guidance experts, will be discussed in this part. The elements of the collected guidance of curriculum has extracted of each answers one by one that have been studied here and presented in the below charts:

The elements of suggested curriculum of Astronomy affect everyday life with separation of different levels of first and second period for general education (three-three) (Table 1).

RESULTS AND DISCUSSION

This study has been done to help the experts and staff of curriculum and the others practically thinks about Astronomy education affect everyday life. So they need to make some changes in books and create appropriate curriculum and train expert teachers, prepare suit instruments and library for this subject and finally perform this lesson at schools and classes. So, the suggested elements of guidance for Astronomy in general education used the results of this research which will briefly present below:

Desired attitude of general guidance curriculum for astronomy education: A composing from monotheism naturism along with cognitive development attitude, the attitude of Curriculum as technology and development of self-dehiscence are suggested.

General and slight goal followed by training school with respect to desired attitude: Consist of creation of scientific spirit and interest to research for students, study and survey of Astronomical phenomena in human daily life, study and understanding of social facts in different area and scientifically understanding of Astronomical phenomena, thoughts, habits, opinions, tendencies, rituals, values and traditions with respect to element, criteria, combat with superstitions, imaginaries:

- The general goals of Astronomy education in our country are to know the surrounding phenomena like moon jaunt around the earth, earth twirl around the sun, appurtenance
- The particular goals of Astronomy education to the students of Islamic Republic of Iran (IRI) concludes some religious lawful facts like rising of the sun, sunset and lunar month for social and cultural evidences.

- The content structure of Astronomy curriculum in appropriate attitude

This structure according to deductive and inductive basis and comparative attitude in curriculum books most common like Geography, History, Social Science, Mathematics, Geometry, Physics, Geology and to continued presentation of Astronomy at educational duration, the student's ages and with the interdisciplinary method would be suggested:

Educational method for Astronomy education at first and second intermediate durations: This curriculum should make the teachers to create educational chances, presentation and doing evaluations of curriculums in the class and planning for scientific and practical development for the students. The teaching of Astronomy has not only been based on information presentation, since this lesson can help the students for learning and researching. The teacher has to create suitable environment for student's abilities and talents. Teacher causes the communications to be facilitated inter humans and his communication with his environments and so promotions.

Evacuation methods for the subjects of Astronomy at first and second intermediate durations: This method has continually be done since to be an opportunity for the students 'situation and also prepare suitable environment for their ability improvements. Presentation of the exercises should be proportionate to their mental ability. The evacuation should accompany to the usage of instruments which is leaded by technology.

Educational technologies for the education of Astronomy for intermediate course: Such technologies includes the use of the existence pictures of sky at night and day, the usage of photography and film making camera for from Skye phenomena, to use computer and computer imagery, to use camera and various kinds of telescope in the planetariums and to observe the observatories. Because by performing spatial phenomena, the students of intermediate course gain the opportunity to survey in the atmosphere and watch the nice phenomena which is perform in the upside atmosphere. By internet and communication with various sites especially with NASA we can directly connect to HABEL telescope and survey Skye phenomena even the earth.

Of course the purpose of paying attention to Astronomy is not monopolistic to use of telescope! There are many landscapes in the night sky which the students can gain them by going to their house yard and look at them in sky. The numbers of these landscapes are even more than what we consider. It is correct that a telescope or binocular camera is useful instruments yet for education of Astronomy and to be familiar with the beauties of sky their existence is not necessary.

Teacher's unconcern to education of astronomy at classes: One of the other results of searching in this case is the teacher's disability in process of Astronomy education which occur their unconcern to Astronomy of education. Conception of the knowledge content is very important to teaching the curriculum of astronomy. Although it may be seen that what you learn today is not applicable for the next year.

Thus and the more important from the others teachers have to know how to prepare themselves for teaching Astronomy which consist of contextual and skill full knowledge. The teachers of the connected lessons to Astronomy such as mathematics, physics, geometry, geology and geography and history which are responsible for astronomy education should take part in training classes.

Although, the study of astronomy has provided a wealth of tangible, monetary and technological gains, perhaps the most important aspect of astronomy is not one of economical measure. Astronomy has and continues to revolutionize our thinking on a worldwide scale. In the past astronomy has been used to measure time, mark the seasons and navigate the vast oceans. As one of the oldest sciences astronomy is part of every culture's history and roots. It inspires us with beautiful images and promises answers to the big questions. It acts as a window into the immense size and complexity of space, putting Earth into perspective and promoting global citizenship and pride in our home planet.

CONCLUSION

On a more pressing level astronomy helps us study how to prolong the survival of our species. For example, it is critical to study the Sun's influence on Earth's climate and how it will affect weather, water levels, etc. Only the study of the Sun and other stars can help us to understand these processes in their entirety. In addition, mapping the movement of all the objects in our Solar System, allows us to predict the potential threats to our planet from space.

On a personal level, teaching astronomy to our youth is also of great value. It has been proven that pupils who

engage in astronomy-related educational activities at a primary or secondary school are more likely to pursue careers in science and technology and to keep up to date with scientific discoveries (National Research Council, 1991). This does not just benefit the field of astronomy but reaches across other scientific disciplines.

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