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THE SIGNIFICANCE OF WRITING SKILLS IN ELL ENVIRONMENT

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ABSTRACT

Language is a medium of communication and people use a language to convey their views, opinions, thoughts, ideas, reactions, emotions and passions. People carry out their communication in order to fulfill their everyday needs. Language plays a vital role in sharing people’s ideas and feelings with others. Human beings are different from animals because of their oral and written communication skills. So, language has become an important tool of communication for human beings to convey their messages to others. Therefore, there is a need for the human beings to learn the language skills. In learning English also, the learners have to acquire all the four basic skills of it. Moreover, the English language learners (ELLs) have to concentrate more on these four skills, viz., listening, speaking, reading and writing. Writing is considered the most difficult skill among these for the learners because of the complexity of the English language. In English language learning (ELL) environment, the learners find it difficult to produce well when they are given certain tasks in writing. There are several reasons why students have lack of written communication skills and some among them are the use of old-fashioned methods by the teachers, lack of proper motivation, large crowded classrooms, lack of facilities and learners’ attitude towards learning. The teachers of English have to study the problems of their ELLs and try to change their methods of teaching so that the learners can improve their writing skills. Moreover, the teachers have to focus on the innovative techniques of teaching writing so that the learners will follow them in order to develop their writing skills in English. Hence, the teachers should involve the ELLs in pair work or group work to develop their writing skills by embracing the latest techniques. This paper sheds a light on the significance of writing skills in ELL environment. First of all, this paper explains the importance of language skills, especially, the skills involved in learning English. Then, it mainly focuses on...
writing skills which are the most difficult skills for the ELLs to acquire. Later, it also emphasizes both the classification and the role of writing. Furthermore, this paper stresses on the influence of the internet on writing skills. This paper also unfolds the facts of accessing the ELL’s writing skills. This paper also elaborates the role of teachers in developing the learners’ writing skills in ELL environment. Finally, some useful suggestions are given to both teachers and learners to make the writing skills a grand success in the ELL environment.

KEYWORDS: Activities; Classrooms; ELL Environment; Ells; English Classrooms; Innovative; Methods; Teachers; Writing Skills.

INTRODUCTION

The twenty-first century has witnessed greater changes in communication and language plays a prominent role in human communication. Without language, people cannot communicate their ideas, thoughts, feelings, views, opinions, reactions, passions and emotions to the people living around them. There is no society that can exist without having a language. So, there is a need for the people to learn a language in order to communicate their ideas and feelings with their fellow human beings. Consequently, people have to learn a language and its skills to convey their messages clearly and effectively to the others. As the real success of communication depends mainly on the way of expression, language skills help human beings to get perfection in their communication. Furthermore, perfect learning of the skills of a language is the right key to open the lock of success in all fields in this modern world. As there is more importance to the language skills, many people try to acquire these skills by putting into practice. There is an old proverb which was derived from the culled wisdom of centuries saying, “Practice maketh a man perfect”. There is no doubt that practice makes a person not only perfect but also skillful, adept, expert, proficient and even superior in a certain field. Therefore, the learners of any language have to put more emphasis on practice to get good knowledge of the language that they are learning.

While learning a new language, learners face many difficulties at the initial stages. It is due to the complexity of structure, vocabulary, semantics, grammar and some other aspects of the language. Some learners find it easy to learn a new language, whereas, some others find it more difficult. Hence, learning a new language involves a mixed experience and the learners have to put more efforts in learning the skills of the language in order to get a very good command over the language. It is a known fact that communication is possible only and when there is a language. If there is no language to communicate, it leads to the dearth of communication. Therefore, a language should exist in order to communicate our views, opinions, ideas, thoughts and feelings to the other people who live in this global world. When people have perfection in a language, they can communicate well with others and convince them in accomplishing their works. This perfection is achieved with a lot of practice and people have to spend more time on the basic skills of the language. Language skills are needed for people to communicate their messages effectively to the others and effective communication is possible by acquiring all the language skills. Therefore, the learners of a language have to concentrate more on language skills as they are the most important ones in developing both oral as well as written communication.
The Importance of Language Skills

Due to globalization, the whole world has become a global village and people can communicate with other people who live in different states, regions and even countries. As different people of the world speak different languages, it is very difficult for people to learn all the languages spoken throughout the world. Hence, there should be a common language for people to communicate with the people all around the globe. Since English is spoken all over the world and it has been an official language for some countries and also acting as lingua franca, people have to learn it and get mastery over it in order to fulfill their ambitions and desires and achieve their aims and goals. In order to learn the English language well, the ELLs have to learn the basic skills involved in it.

The learners of the English language need to learn the four basic skills of it such as listening, speaking, reading and writing. These four skills are very important and the learners should not neglect any of these as each skill has its own importance. The above figure illustrates that the four language skills are categorized into receptive or passive skills and productive or active skills. Listening and reading are considered the receptive skills because the learners merely receive and understand them and they do not expose to them. Whereas, speaking and writing are considered the productive skills and the learners produce language through these skills. Since the learners find it difficult to produce their skills effectively, the teachers should think of alternate approaches and strategies to improve the learners’ English in the English language learning (ELL) environment.

All the four language skills play a vital role in learning English and the learners have to acquire all these skills as these skills have their own importance. Listening is the first skill among these four skills. Moreover, the learners have the habit of listening from their childhood stage. At the initial stages, the learners need to practice from the phonological level and concentrate mainly on the important words by neglecting the unimportant ones. To promote good listening skills among the learners, the teachers should motivate the learners towards listening to the sounds of the English language in order to grasp the correct pronunciation and later, they should concentrate on the sentence level. After that, the teachers should apply various suitable approaches and methods that promote the listening skills of the learners in the ELL environment.
Speaking is a productive skill and the learners need a lot of practice to acquire this skill. The ELLs need good command over both vocabulary and grammar to have mastery over speaking skills. In this regard, Rao (2018) says, “In order to develop the speaking skills of the learners, the English language teachers have to put their focus mainly on vocabulary and grammar and then on speech sounds, stress, intonation patterns and finally on patterns of sentences”. It is true that the language teachers should focus more on the important elements of writing to develop the writing skills of the ELLs. As language is a tool to communicate with the others, the ELLs should concentrate more on speaking skills. Moreover, the language teachers have to concentrate more on listening skills by implementing the activities such as pair work and group work. Furthermore, the ELLs have to utilize the opportunities to speak the language both inside and outside of their classrooms. According to Rivers (1978), “Speaking is used twice as much as reading and writing in our communication”. This seems to be true as most people spend their time in speaking English rather than reading and writing in real time. As speaking skills are more important for the ELLs to establish themselves in their future career, the teachers should think of implementing a variety of activities related to speaking in the ELL environment.

Reading is a receptive skill and this skill is needed to study all their subjects in English. As the learners are benefitted a lot from reading, this skill is to be developed among the ELLs to improve their vocabulary, spelling, grammar and even writing. The ELLs will fix certain structures of the sentences in their minds as they go on reading the texts. This encourages the learners to produce similar sentences when they speak or write in English. In reading the text, the ELLs learn various techniques such as skimming, scanning, note making, etc. Since there are many approaches to teach reading skills, the teachers have to concentrate more on them to develop good reading habits among the learners in the ELL environment.

Writing is considered the most difficult skill among the four skills and the ELLs need to spend more time to practice it. Whatever ideas the learners get into their mind, immediately they have to note them down and later organize these ideas whenever they wish to write something. As there is no correspondence between the spelling and pronunciation of the English, the ELLs get confused in writing the correct spelling of the words. Moreover, the learners need to organize all the points in a systematic way when they aim at writing a good text. As writing involves more practice and commitment, the English teachers should apply several techniques such as group and pair works so that the learners can discuss their points with the others and develop their writing skills enormously in the ELL environment.

**REVIEW OF LITERATURE**

Writing is considered the most important skills of English language. When compared to the other skills, writing seems to be the most difficult skill for the ELLs as it involves many things in it. The ELLs find listening and reading are the easiest skills whereas they find speaking and writing are more difficult ones as they are productive skills. The learners have to work hard in acquiring these two skills as they need more practice. Hence the teachers have to think of alternative methods to teach these skills. Writing skill has undergone many developments and changes in the recent years. In this regard, Harmer (2007: 1) says, “Human activity of writing is a fairly recent development in the evolution of men and women … some of the earliest writing found so far dates from about 5,500 years ago”. In the early ages, people did not write anything to convey any message, but they used to draw different methods and paintings to represent different things.
which were connected to their daily lives. Hence, they conveyed their messages in the form of figures, images and pictures. In this context, Yule states, “Human beings started to write some 20,000 to 25,000 years ago”. Furthermore, Crystal says that ancient people used pictograms to represent various symbols. For example, the symbol of ☼ represents the sun. As time passes, pictograms have changed to be ideograms which played a major role in writing system.

In the development process of writing, it developed from picture-writing (pictograms) to idea-writing (ideograms) and then to word-writing (logograms). Then, the word-based writing system was purely followed by the Sumerians. The alphabet was introduced in the Sinaic word by replacing the pictographs between the period of 1700 and 1500 B.C. After the invention of the ink in 2697 by Tien- Lcheu, the Chinese philosopher and the invention of the paper in 1200 B.C. in China, writing became quite common.

**Writing and its Definition**

In the English language, writing is considered more difficult skill than the other three skills to learn. When a clear and meaningful message is conveyed through writing, it becomes so difficult because of its complexity. Writing is really a difficult task to perform because of its complexity in spelling, vocabulary, grammar, meaning, sentence structure, etc. Moreover, there is no proper correspondence between the spelling and the pronunciation of English words. In general terms, writing is the graphic representation through symbols, i.e., letters. In the process of writing in English, the ELLs should get mastery over the graphic system of the English language, the grammatical system and the selection of appropriate vocabulary that is relevant to the context. According to Crystal (2006: 257), “Writing is a way of communicating which uses a system of visual marks made on some kind of surface. It is one kind of graphic expression”. Widdowson (2001: 62) also says, “Writing is the use of visual medium to manifest the graph logical and grammatical system of the language”. Moreover, Bloomfield (Cited in Crystal, 1994: 178) states, “Writing is not language, but merely a way of recording language by means of visible marks”. Furthermore, Olshtain (1991: 235) says, “Writing as a communicative activity needs to be encouraged and nurtured during the language learner’s course of study”. Richards and Schmidt (2002) also say, “Writing is viewed as a result of complex processes of planning, drafting, reviewing and revising”.

**Writing as the Most Difficult Skill**

In learning the English language, learners face more difficulties in writing than the other skills that they learn. This is due to the complexity of phonological, morphological, semantic and syntactic system of the English language. Many researchers express their feeling about the difficulty of writing skill for the learners. Negari (2012) says, “Learning to write in a first (L1), second (L2) or foreign language (FL) seems to be the most difficult skill for language learners to acquire in academic contexts”. Similarly, Richards (2008) asserts, “Learning to write in either first or second language is one of the most difficult tasks students encounter and one that few people can be said to fully master”. Furthermore, Kroll (2003) states, “Writing is a complex process that involves the mastery of multiple skills that contribute to the overall difficulty of writing for any language user”. So, writing is both a challenging and difficult skill for anyone to acquire it. Hence, it is understood from the above observations that writing is the most difficult skill to acquire not only for the first language learners but also for the foreign or second language learners.
Classification of Writing

Writing is considered the most difficult skill and it is also further classified into some categories. Ong’ondo (2001) has classified writing into two categories such as functional and creative. Functional writing includes writing of notices, reports, letters, speeches, minutes, memorandum and book reviews. On contrast, creative writing primarily depends on the capabilities of telling or retelling the parts of information in descriptive or narrative way which is used to change the information into new texts viz., argumentative or exposition writing. Ong’ondo’s study mainly focused on creative writing with the specific purpose to explore the challenges that learners face in developing their skills in writing their essays in English.

Further, the writing skills which are needed for the two categories, namely, functional and creative have been clustered by Gathumbi and Masembe (2005) into two modules such as basic and advanced. According to them, basic skills include correct punctuation, proper spelling and good handwriting, whereas, correct usage of grammar, proper organization of ideas and originality in expression are included in advanced skills. In their observation, they find that writing skills are the most difficult skills for the learners to get mastery over them in the second language learning situation. Moreover, Graham and Perin also say, “A well written essay focuses on the topic and has an organizational pattern that enables a reader to follow the flow of ideas”. It also comprises supporting ideas which are established by using the right vocabulary items and also examples that are followed strictly by the pacts of standard English language viz., capitalization, correct spelling and sentence structure.

The Role of Writing in English in Academics

According to Mukulu et al. (2006), “Writing is considered the most important language skill that students require for their personal development and academic success”. In the same way, Rao (2007) asserts, “Writing strengthens students’ learning, thinking and reflecting on the English language in their academics”. Likewise, Ahmed says, “Competence in writing helps students perform well in their academic programmes”. Furthermore, learners who are more capable in
writing well in English can perform well in their future once they become action researchers or professionals. Nevertheless, mastering good writing skills is the basic problem for the learners of English at all levels. Undoubtedly, writing skills are very important for the learners of all levels in the educational system, particularly, in learning a language like English as it has a complexity of spelling, pronunciation, sentence structure and contextual meaning. Moreover, most of the learners’ performance is based on the examination system where their assessment is measured only through tests and examinations. Those who perform well in writing will be able to do well in the other skills also. Since writing is the most important skill for the ELLs to get advancement in their academic career, the teachers of English have to help their learners to acquire all the skills in improving their writing skills.

The teachers have to encourage their ELLs to express their thoughts, ideas and opinions clearly and effectively in the classroom so that they will be able to put down them when they write any assignment. According to Kroll (2003), “Improving the writing abilities of students has both academic and social implications”. Moreover, the ELLs perform well in their writing tasks when they are properly guided by their teachers. When teachers motivate their learners properly, they come out with innovative ideas by applying their knowledge and intelligence in presenting clear, logical and coherent ideas in their writing. These skills develop the ELLs to shine in their professions in the future and they perform well in doing the written tasks.

The Influence of the Internet on Writing Skills

Due to the globalization era, many radical changes are taking place and the influence of the internet is one among them. To be good at getting the information, one should be very good at English as it is the main language used for the internet purposes. Through internet, learners can also learn a variety of usages of the written language such as writing various types of memos, telephone messages and business letters. Even today, a majority of ELLs neglect writing skills and they are not able to cope with the present system of examining the writing skills. As a result, their performance in the examination remains unsatisfactory. It leads them to be unsuccessful not only in their schools, colleges and workplaces but also in their personal lives. As writing is the most difficult skill for the EFL/ESL learners to acquire, the teachers have to think of alternate methods and approaches of teaching the writing skills so that the ELLs will acquire them with a lot of interest and more enthusiasm.

The internet has changed the English language drastically. Due to the advent of the internet, ELLs can rectify their mistakes, find synonyms and antonyms online and get answers for all their questions and are able to browse the text just by sitting at home. It is also found that most of the highly literate countries make use of the internet and getting the benefits of it. Even the average learners are able to write well in English when they are used to the internet. Moreover, thousands of new words have been introduced to the English language with the advent of the internet. The new slang internet terminology has appeared and the list and the terms include on the list are: selfie, salty, fleek, catfish, hashtag, throwing shade, rickrolling and so on. So, we can say that a lot of internet vocabulary belongs to the category of slang or jargon. Another advantage of the internet in developing the learners’ English is that the ELLs can get grips with dialects as they can understand the dialects of various regions and nations. One more added advantage for ELLs from the internet is that they are learning new grammar rather than losing their ability to speak and write English.
With the advent of the internet, many learners download the apps and use them in their mobile phones. So they are able to use their mobiles on their own and sometimes they clarify their doubts without consulting the teachers. In doing the writing tasks, they take the help of some apps such as Grammarly, to overcome their mistakes. Grammarly is an online grammar and spell checker as well as plagiarism detector. Grammarly checks more than 250 grammatical structures to proof read a text. As Grammarly helps the learners in many ways, they can use it to check their grammatical mistakes and rectify them. In this way, the ELLs can develop their writing skills of English using this Grammarly app.

The Role of Teachers in Developing the Learners’ Writing Skills in ELL Environment

It is evident from the above facts that the learners’ assessment of the writing tasks gives the opportunity of teaching-learning information to not only teachers but also learners. Therefore, the teachers have to pay more attention on the learners’ writing skills as most of the learners face problems when they start writing. For this purpose, the teachers should understand the level of the students and try to adopt relevant teaching strategies of improving their writing skills that are more suitable for them. Moreover, the tasks that they choose for this purpose should be well-known to the ELLs and they should create interest among the learners. Also, the teachers should grade these tasks from easy to complex and also supervise the work of the learners when they are doing in groups.

The main role of the teachers in implementing different strategies of writing skills is vital in the ELL environment. As English is taught as a foreign or second language in non-native countries of English, the learners find it difficult to learn it. When it comes to writing, the ELLs find it more difficult as writing is considered to be the most complex skill among the four language skills. Due to various reasons such as phonological, morphological, semantic and syntactic features, the ELLs find it difficult to grasp all these rules as they need more practice. As any skill needs proper training and more practice, writing in English also needs a lot of practice and perfection in all respects. Therefore, the ELLs have to pay more attention and put more emphasis on writing skills so they can surely master them. As a result, writing becomes very easy for the learners and they learn it with more interest and it will be very useful for them in attaining good results.

As writing is considered the most difficult and complex skill for the ELLs, the teachers should understand the problems of the learners and try to implement various techniques an approaches in their teaching. Rivers and Temperley (1979: 263, Cited in Azzioui, 2009) state, “To write so that one is really communicating a message isolated in place and time, is an art that requires consciously directed effort and deliberate change in language”. Even though writing skill is more difficult for the learners, the teachers should simplify it and involve the learners in writing tasks by giving some topics that are interested to their ELLs. In view of the complexity of writing skills, the English teachers have to study thoroughly the latest and innovative ways of teaching it in the ELL environment. When we discuss the complexity of writing, the same problem is faced by all the learners of different languages. Since many things are involved in learning writings skills of English, the ELLs struggle a lot to overcome this problem. Due to its complexity, many learners form a kind of phobia and they spend very little time on it. Therefore, the teachers should motivate the learners by giving them interesting topics after discussing the titles with their learners in the English classrooms.
According to Hedge (2000), many of the adult learners spend very less time on writing. He studied on the involvement of the learners on communication activities and his results disclose, “All the time spent in communicative activities, adults devote 45% of their energies to listening, 30% to speaking, 16% to reading and 9% to writing”. The diagram here uncovers that the majority of adult learners devote 91% of their time spending on listening, reading and speaking, whereas they spend only 9% on writing. It shows how much stress they have when they try to write English. Almost all the ELLs have the same kind of stress and they do not pay more attention to writing and lose concentration. Furthermore, it is easily understood that the ELLs need to learn a vast vocabulary and a variety of grammatical structures when they have to put more concentration on their writing skills. Therefore, the learners should devote more time on writing skills and do a lot of practice to overcome this problem. Furthermore, the English language teachers have to emphasize more on writing skills by choosing variety of topics that are more interested to the learners so that they will concentrate more on writing skills in the ELL environment.

Since writing is a difficult skill for the learners of English as a foreign or second language, it should be taught in a simplified way by following the recent changes in teaching writing. The learners should pay more interest on the topics related to writing skills in the ELL environment and put more efforts to get good command over writing skills. Moreover, the teachers should involve their learners in writing tasks by encouraging pair work and group work in the ELL environment so that the ELLs participate in these activities actively with more involvement in their work.

CONCLUSION

This paper has emphasized on the significance of writing skills in ELL environment. First of all, this paper has discussed the importance of language skills and then it has also explained why writing is considered the most difficult skill. Moreover, it has also put emphasis on the classification as well as the role of writing. This paper has also put an emphasis on the influence
of the internet on writing skills. Furthermore, it has clearly shown the facts of accessing the ELLs’ writing skills. This paper has also elaborated the role of teachers in developing the learners’ writing skills in ELL environment. Finally, some useful suggestions have been given to the ELLs and the teachers to make the writing skills a successful one in the ELL environment.

It is a known fact that writing is a complex skill to acquire and the teachers should involve the ELLs to have more practice on several writing activities. The teachers should think of various activities related to writing and involve the learners in such activities. Thus, the teachers should understand the levels and interests of the learners and choose the topics accordingly so that the learners participate in the writing activities with more interest and enthusiasm. It is the responsibility of the ELLs to complete the tasks given by the teachers. So, they need to work in groups and pairs so that they can do well in finishing the given tasks. In this regard, the ELLs are advised to concentrate more by allotting additional time to their writing skills so that there is a chance for them to acquire the skills effectively in the ELL environment. Therefore, the ELLs should take help from their teachers whenever and wherever they face any kind of problem. Furthermore, the teachers should motivate the learners properly towards writing skills by following different techniques and strategies that involve the learners more on learning writing skills. Hence, the main responsibility is on the shoulders of the English teachers to motivate and guide the ELLs properly in developing their writing skills enormously in the ELL environment.

REFERENCES


ABOUT THE AUTHOR

The author, Parupalli Srinivas Rao, has a vast experience of teaching English at various levels. He has been specialized in ELT and has authored 10 books and published several research papers related to ELT in various international journals. He has attended several national and international ELT conferences and also presented some papers in them.

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VISUAL ARTS EDUCATION: FUNCTIONS AND ROLES OF PRIMARY ART TEACHERS

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ABSTRACT

The paper reports on Indian research with primary teachers reflecting in various ways on their preparation to teach areas across the curriculum, their perceptions of their ability to do so and their levels of confidence in teaching in these areas. The research contrasts the Visual and Performing Arts vis à vis the more traditional academic areas of the curriculum such as Literacy and Numeracy. Primary teachers were invited to respond to a mailed survey focusing on these issues together with a range of considerations pertinent specifically to the Visual Arts; they were also invited to indicate their willingness to participate in the next phase of the research. The subsequent stages of the study involved, firstly, an intensive interview with a selection of the participants and, secondly, a case study mentoring programme with three teachers exploring the possibilities of tailored support. The research revealed critical gaps between preschool teachers’ levels of ability, confidence and enjoyment which impacted significantly on their delivery of Visual Arts programmes which accords with the findings of national and international studies in relation to generalist primary teachers. Many of the early childhood teachers referred to the paucity and inadequacy of their initial teacher preparation for Visual Arts, compared with the perceived key areas of Literacy and Numeracy, and the dearth of subsequent professional learning opportunities. The paper interrogates these disparities and explores teachers’ specific concerns. In response to these concerns, a mentoring programme was developed and trialled in Indian preschools using only existing resources. Its efficacy as an individualized strategy suggests its strong potential for a broader but targeted professional development mentoring program.
INTRODUCTION

While it might seem almost platitudinous to assert that it is the teachers who are the heart of any vibrant Visual Arts program and that Visual Arts experiences are essential to the education of young children in the year before school, these fundamentals are threatened if teachers are fearful of the Visual Arts per se. While there is nothing new in the identification of art anxiety as a phenomenon amongst classroom teachers, attempts to ameliorate it have typically revolved around the acknowledgement of generalist primary teachers’ lack of visual arts discipline knowledge, and the recognition of the dearth of relevant professional learning opportunities once teachers are in the field.

This paper focuses on the early childhood level in India substantiating earlier data from the primary level and trialing a mentoring model to combat the negative impacts of art anxiety with individual teachers.

More recently, sixty-five per cent of teachers commented about their lack of confidence in art with 56 per cent of those noting that they lacked art skills and 22 percent expressing concern because they ‘could not draw’ citing a range of self-derogatory comments:

‘I’m rubbish at Art! I’m just not creative’

‘My sister’s got the creative gene’

‘I was not good at art at school … I can’t draw … when I draw pictures, people don’t know what they are’

At the start of each semester, instructors of college art methods courses for preservice general education frequently hear the words ‘I am not an artist. I can’t draw”. Drawing, painting, or art making in general can elicit strong feelings of self-doubt, low confidence, and anxiety in some preservice general education teachers. Reports shows that the 18 preservice teacher participants verbalized … feelings of being nervous, frustrated, overwhelmed, uncomfortable, stressed, uneasy, worried, embarrassed, not worthy, afraid, intimidated, being inept, and self-conscious over the thought of participating in art activities; they did not consider themselves artistic. Less than a third of the students in their final practice were able to learn from a class teacher’s subject knowledge of art. In the interviews with 20 students in Phase Two we asked specifically about whether they felt they had learned from a class teachers’ or specialists’ subject knowledge in art. The findings were not encouraging as only three students felt that they learned from a class teacher and one from a subject specialist. [One commented that]

‘I think she wasn’t really an artist at all herself, and admitted that she did not like the arts at all and had had no training in the arts. She was rather pleased that I was there. ‘Oh, good I’ve got a student, somebody who can do this [art work]’.

The Indian National Review of Visual Education revealed high levels of anxiety and an expressed lack of confidence among teachers in Indian primary and secondary schools. Research with pre-service early childhood teachers in the US found that 95 per cent felt that they lacked artistic ability and creative skills; 90 per cent felt that they had no ability to create an aesthetic environment. I recently visited a pre-service teacher engaged in practical experience at a primary school in one of the major city. The children in the school came from
various socio-cultural backgrounds and were between the ages of 3-5 years. While there, I noticed the children were engaged in phonics lessons. I asked the supervising teacher what the general plan was for each day. She responded, ‘Well we really have to concentrate on the children learning literacy. We have moved away from a play-based curriculum to a formal teaching approach’. I shivered on the insight. ‘What about the Art?’ I ask, ‘Oh we did a little bit but not a lot. I don’t really feel comfortable with the Art’. What was wrong? Frustrated, I picked up the phone and dialed a friend at a local kindergarten. I began telling my tale. ‘But you don’t understand’, responded my friend. Her voice becomes stern. ‘There is no professional development to help these teachers see why the arts are important. They have no one to collaborate or network with. Most of them leave university not knowing how to teach the art. They need help and direction if you want them to teach the art’. In one conversation, my question was answered. The problem was that some early primary teachers did not have the knowledge or skills to teach the art.

This anecdotal evidence suggested to us that the same might be true for pre-school teachers and, certainly, it is relatively common to see art displayed in preschools which does not reflect the individuality, creativity and active thinking of young children but rather, repetition, conformity and teacher domination. The prevalence of such dismal displays leads to questions about the teachers themselves and about how much they enjoy the Arts, what they know about teaching drawing, painting and clay modeling to young children and why they so often fall back on formulaic activities. Teaching is a challenging task and its effectiveness relies very much upon teachers having a sense of where they’re heading and why they are headed there. What might be the direction and purpose of teachers who offer stencils and set activities as ART? What pressures might such preschool teachers be experiencing and what support might they need? Certainly there are issues which are familiar to generalist teachers of the Visual Arts: Many teachers grapple with the conflicting imperatives of the curriculum, parental expectations, the place of the arts in our communities, and the need for addressing diversity. While these pressures are shared, the support preschool teachers require is varied and complex.

The question is how to design professional learning that addresses the concerns of many while providing individual assistance which respects differing sets of skills and needs.

**SCOPE AND METHODOLOGY**

This question led to the current study which was designed to probe whether preschool teachers also experience a lack of confidence in teaching Visual Arts and to seek to ameliorate any lack of confidence in a cost effective and non-invasive way. The research project is located in Delhi where all children are offered preschool attendance of fifteen hours per week for forty weeks in the year before they go to school; the children are, mostly, four years old. The study aimed to find out from qualified teachers of young children how they were enjoying teaching Visual Arts, what Visual Arts experiences they were providing, what priority they gave to this teaching, what confidence they had in their ability to teach Visual Arts and how well prepared they were to teach it. The study was designed in three phases. Phase One of the research consisted of a confidential mailed survey focusing on all curriculum areas together with a range of issues pertinent, specifically, to the Arts and yielded a 52 per cent response rate. The final survey question invited participants to indicate their willingness to take part in Phase Two and all except one expressed interest in participating.
Ten teachers were subsequently selected at random for Phase Two which involved a one on one interview focusing in greater depth on issues raised by the survey and provided scope for probing more extensively each teachers’ practices, philosophies and doubts. From the Phase Two participants, three were selected for a case study mentoring programme designed to allow each to develop a personal project to be conducted by each teacher in the context of regular collaboration, mentoring and support in their preschools.

RESULTS

In Phase One, data were sought in relation to the teachers’ perceived levels of confidence in, ability in, and enjoyment of teaching across key learning areas.

Table 1 shows the survey participants’ levels of confidence in teaching across learning areas. Discrepancies in levels of teaching confidence are immediately apparent with 80 percent of responses in the categories ‘confident’ and ‘very confident’ for Literacy and Numeracy as opposed to 30 per cent or less in the same categories for the Arts. The corollary of this is a response range across all four Arts categories of 12 to 25 per cent for ‘not at all confident’ and 30 to 35 per cent for ‘somewhat confident’. The only areas in which respondents were ‘Not at all confident’ were Visual Arts, Music, Drama and Dance.

Table 2 shows participants’ perceptions of their ability to teach across learning areas. Perceptions of ability were often low to moderate despite the fact that all teachers surveyed reported at least two years preschool teaching experience and some as many as 30 years. In only one area, Literacy, did more than 20 per cent perceive their teaching ability to be ‘Very high’. Responses to ‘Little or no ability’, ‘Some ability’ and ‘Moderate ability’ totalled 85 per cent across these categories for the teaching of Visual Arts.

TABLE 1 LEVELS OF CONFIDENCE IN TEACHING PRESCHOOL LEARNING AREAS.

<table>
<thead>
<tr>
<th>LEARNING AREA</th>
<th>NOT AT ALL CONFIDENT %</th>
<th>SOMEWHAT CONFIDENT %</th>
<th>MODERATELY CONFIDENT %</th>
<th>CONFIDENT %</th>
<th>VERY CONFIDENT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>LITERACY</td>
<td>3.85</td>
<td>19.23</td>
<td>42.30</td>
<td>38.46</td>
<td>30.76</td>
</tr>
<tr>
<td>NUMERACY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSTAINABILITY/SCIENCE/ENVIRONMENTAL STUDIES</td>
<td>3.85</td>
<td>34.61</td>
<td>38.46</td>
<td>23.07</td>
<td></td>
</tr>
<tr>
<td>VISUAL ARTS</td>
<td>11.53</td>
<td>30.76</td>
<td>19.23</td>
<td>23.07</td>
<td>7.69</td>
</tr>
<tr>
<td>MUSIC</td>
<td>19.23</td>
<td>23.07</td>
<td>23.07</td>
<td>26.92</td>
<td>7.69</td>
</tr>
<tr>
<td>DRAMA</td>
<td>23.07</td>
<td>34.61</td>
<td>15.38</td>
<td>23.07</td>
<td>3.85</td>
</tr>
<tr>
<td>DANCE</td>
<td>19.23</td>
<td>34.61</td>
<td>26.92</td>
<td>11.53</td>
<td>3.85</td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td>11.53</td>
<td>30.76</td>
<td>38.46</td>
<td>15.38</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 profiles disparities between high/very high levels of confidence, perceived ability and enjoyment across the curriculum.

There is a clear mismatch between participants’ perceptions of their ability and their levels of confidence and enjoyment in teaching. Literacy and Numeracy share a confidence level of 80 per cent (confident/very confident) and a perceived ability level of 62 per cent (high/very high ability) with the enjoyment level for Literacy exceeding that for Numeracy by 10 per cent. Across the Arts, however, enjoyment is higher in all areas than either confidence or perceived ability to teach. For all the creative arts, perceived ability ranges between 11 and 15 per cent, the level of confidence being highest for music, albeit only at 35 per cent, while enjoyment is highest for Visual Arts.

### TABLE 2 PERCEIVED ABILITY LEVELS IN TEACHING IN PRESCHOOL LEARNING AREAS

<table>
<thead>
<tr>
<th>LEARNING AREA</th>
<th>LITTLE OR NO ABILITY %</th>
<th>SOME ABILITY%</th>
<th>MODERATE ABILITY%</th>
<th>HIGH ABILITY%</th>
<th>VERY HIGH ABILITY%</th>
</tr>
</thead>
<tbody>
<tr>
<td>LITERACY</td>
<td></td>
<td>38.46</td>
<td>38.46</td>
<td>23.07</td>
<td></td>
</tr>
<tr>
<td>NUMERACY</td>
<td>3.85</td>
<td>34.61</td>
<td>50.00</td>
<td>11.53</td>
<td></td>
</tr>
<tr>
<td>SUSTAINABILITY/SCIENCE/ENVIRONMENTAL STUDIES</td>
<td>3.85</td>
<td>53.84</td>
<td>34.61</td>
<td></td>
<td>7.69</td>
</tr>
<tr>
<td>VISUAL ARTS</td>
<td>7.69</td>
<td>30.76</td>
<td>46.15</td>
<td>11.53</td>
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<td>42.30</td>
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<td></td>
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<tr>
<td>DANCE</td>
<td>19.23</td>
<td>34.61</td>
<td>34.61</td>
<td>11.53</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL EDUCATION</td>
<td>19.23</td>
<td>38.46</td>
<td>34.61</td>
<td>7.69</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 3 PERCEIVED LEVELS OF CONFIDENCE, ABILITY AND ENJOYMENT OF TEACHING VISUAL ARTS IN ACT PRESCHOOLS

<table>
<thead>
<tr>
<th>VISUAL ARTS</th>
<th>LEVEL OF CONFIDENCE</th>
<th>PERCEIVED ABILITY</th>
<th>ENJOYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CONFIDENT/VERY CONFIDENT %</td>
<td>HIGH/VERY HIGH %</td>
<td>MODERATE ABILITY %</td>
</tr>
<tr>
<td>DRAWING</td>
<td>34.60</td>
<td>19.23</td>
<td>61.53</td>
</tr>
<tr>
<td>PAINTING</td>
<td>34.61</td>
<td>15.38</td>
<td>76.91</td>
</tr>
<tr>
<td>PRINT MAKING</td>
<td>23.06</td>
<td>11.53</td>
<td>46.13</td>
</tr>
<tr>
<td>SCULPING/CLAY MODELLING</td>
<td>23.06</td>
<td>30.76</td>
<td>46.14</td>
</tr>
<tr>
<td>CERAMICS/POTTERY</td>
<td>15.38</td>
<td>7.69</td>
<td>46.15</td>
</tr>
<tr>
<td>CONSTRUCTION/COLLAGE</td>
<td>38.45</td>
<td>19.23</td>
<td>57.69</td>
</tr>
<tr>
<td>WOOD WORK</td>
<td>11.54</td>
<td>7.69</td>
<td>38.46</td>
</tr>
<tr>
<td>DESIGN</td>
<td>11.54</td>
<td>3.85</td>
<td>30.77</td>
</tr>
</tbody>
</table>
The second phase of the research offered the opportunity to probe these disparities individually and in greater depth through an intensive interview with each of ten teachers selected at random from the 96 per cent of survey participants who indicated their willingness to proceed to Phase Two. Interviews were held in their own preschools and teachers were encouraged to share their concerns and hopes. It became very clear that the gap between teachers’ levels of ability, confidence and enjoyment had a significant impact on their delivery of a Visual Arts program. Many referred to the paucity and inadequacy of initial teacher preparation for Visual Arts compared with the perceived key areas of Literacy and Numeracy.

Only one of the teachers interviewed found delight in teaching Visual Arts. Some admitted ruefully that they ‘did their best’ but lamented that they lacked the necessary skills. Others acknowledged that they did not have any interest in the Arts but found ‘ideas’ for ‘activities’ which they assumed were appropriate. A number were unclear what was meant by Visual Arts and some were unable to distinguish between Art and Craft. One teacher said that she felt her skills to be so lacking that she felt sorry for the children she taught. Some, knowing that the project was designed to assist preschool teachers, made a personal plea for inclusion in the project to the extent that one wrote on her confidential survey paper: “Please help”. Most alarmingly, the majority of teachers despairs about their lack of ability in the Arts and many also expressed guilt that they did not know how to teach Visual Arts.

Of the ten teacher interviewees, only one expressed any degree of confidence in teaching the Visual Arts, but that teacher expressed doubts about the general acceptability of her methods:

It’s unusual for people to understand where I’m coming from, you know, like I’ve never been a photocopy teacher and I never will be. None of the teachers expressed a clear direction in developing an educational program in the Visual Arts. This was surprising as, in this random group, two had been awarded the distinction of being recipients of the Teacher of the Year award from the large Public Education sector. Hence these teachers were in no way incompetent practitioners but were nevertheless stultified in their teaching of the Visual Arts by a crippling lack of confidence and the undermining knowledge that each lacked a basic understanding of an educational framework for teaching Visual Arts. Overall, their comments reflect a dual sense of confusion and despair:

I’m ad hoc so I don’t have a clear vision of what I’d like to achieve so it’s about … grabbing anything I can get at the time.

I am very isolated and I know who I am as a teacher and I know that I can go with it but some of the ideas are impractical.

Sometimes I feel very alone and isolated in my beliefs.

I just don’t think I teach it well enough to my own standards and I think I do children a disservice by not having that knowledge.

I’m shocking; I don’t have many skills in that area. I’m not an artist at all.

I don’t feel I have skills in any of those areas where, you know, what I think I bring is that I have an aesthetic eye and so I am able to present materials to children in an unwitting way but I’ve never actually done any art-making myself.
generally the teachers perceived critical lacks in their pre-service preparation: I learnt a lot about the Arts but I didn’t actually learn how to teach it and that’s worried me. Because of the way the course was structured I’ve never actually done a subject called ‘Visual Arts’… I’ve never done any subject related to Visual Arts. It’s only what I’ve picked up along the way so that sort of limits things.

It wasn’t really deep; it was too quick for the…I would rather have had more ‘hands on’…the recipes they gave us were too short: ‘This is how you work with clay’; ‘This clay may cause asthma’ – really, really fast and then it was gone.

In my training we did just one art unit and that’s it.

one teacher referred to her training in Visual Arts as adequate but nevertheless admitted her current practice was shameful. In terms of support, there appeared to be almost no professional learning taking place which was relevant to the Visual Arts. On the other hand, there was evidence of an escalating dependence on outside experts and institutions such as galleries and museums to deliver art experiences which, while often high quality, were isolated occurrences and could not constitute an integrated program of learning, visual awareness and skill development:

Currently we’re talking about love and the children are doing lots of their representations of love through art – drawing and through clay – and I’m thinking ‘If I had an image, a conceptual image to base some more extension on, that would be fantastic’. I feel as though I need an artist by my side.

overall a _cri de coeur_ characterized the teachers’ sense of their needs and hopes:

I’d like someone to come in and work with us …someone to actually say, “Have you considered this?

My problem is I can talk to someone but you need to actually be putting it in your classroom.

I guess it’s someone to talk about these things so it’s what worked for them and what hasn’t; where do they get the resources and how do they actually put it together so that it worked well, do you know what I mean? Someone with experience, I guess, or maybe a resource – either a book or an internet site – something like that – where you can go and have a look at what other people have done and with it in action before you actually delve in to it yourself.

The overwhelming sense of inchoate need expressed by these ten teachers in their own idiosyncratic ways meant that all would have benefited from selection for the third mentoring phase of the project. In the end the three teachers were chosen to represent a geographical spread across the city, a range of ages and years of teaching and a variety of professional and personal objectives:

The researcher – mentor worked with each teacher for about one hour per week or fortnight over a three month period, visiting at a time and location of the teacher’s choice. Together they identified challenges, clarified goals, reported progress, recognised limitations, adjusted programs, checked stores, evaluated materials and equipment, designed new playroom settings, created art exhibitions with the children, talked with school principals, staff, parents and children and decided how to proceed. On rare occasions the researcher - mentor stayed with the children and worked with them but, mostly, the teacher gave up some of her preparation time to
discussion and they met in a quiet staff room. The teachers nominated their own goals or directions and were free to change/modify these or to leave the project.

The role of the researcher-mentor evolved over the duration of each case study but focussed consistently around listening, questioning, challenging, coaching, suggesting, encouraging and sharing experiences in teaching Visual Arts; the teachers investigated and shared the dilemmas of their current situation. It was very important that the researcher-mentor was not the ‘expert’; neither was she a colleague but rather an ‘outsider’ with a passion for the Arts who enjoyed working with the three very keen and honest teachers and delighting in their progress. The focus was always on the teacher and her work with the children who delighted the adults with their responses and progress.

The results of this phase were truly exciting not only for the teacher participants but also for the researcher – mentor in realising a new and different model of professional development. Initial expectations were that progress would be slow but the teachers ‘flew’. These indicative quotations from their journals reflect their burgeoning optimism:

[I] have amazingly realised how art is accessible to everyone and it is a wonderful way of building confidence in so many children.

You really do need these professional discussions away from the pressures of work.

This part of the journey is over but it is definitely not the end.

I think the whole project has been an amazing professional experience – through discussion – simple explorations have been able to be developed and become cross curricula explorations.

**CONCLUSION**

The trial was successful for all three teachers who have expressed the wish to continue in an extended mentoring program. There have also been two additional but unexpected outcomes: Firstly, the children in those 3 primary schools are now immersed in programs of Visual Arts appropriate to their age and experience and, secondly, the three teachers, have shared their enthusiasm widely so that the Association is now conducting workshops for preschool teachers using professional artists who have appropriate experience in, and knowledge of, working with young children.

The strategy of encouraging each teacher to articulate a preferred goal, and mentoring the pathway of each teacher as she explored and navigated towards the goal, was highly effective—suggesting it as a new model of professional learning to be probed and researched further. Traditional professional learning opportunities for teachers post initial training tend to be reactive to opportunity—a visiting guru is shared; a teaching colleague has time to pass on some ‘good ideas’—or they derive from the need to initiate teachers into the intricacies of curriculum change and innovation. In some case it provides a forum for acculturation into institutional or policy change. Rarely does it derive from a grass roots analysis of either collective or individual needs.

The aforementioned National Review of Visual Education reported that, despite ‘centres of excellence’ in schools and preschools, the state of the Visual Arts in Indian schools was not healthy. The results of the current study, albeit from a small and specific location base, suggest
strongly that these findings about Visual Arts Education in primary and secondary schools are almost certainly likely also to apply to Early Childhood Education. Teachers acknowledged that, while there was often intellectual stimulation to be derived from professional learning inputs, these did not even begin to intersect with their needs. The case study participants shared the problem of Arts anxiety, a sense of personal ignorance about the Visual Arts and a consequent lack of confidence in their ability to create and deliver a Visual Arts program. Yet, for each, the pathway out of their shared dilemma was very different. There is no way that an individual entering their space with a pre-prepared remedial strategy would have been efficacious.

REFERENCES


THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF SCIENCE, TECHNOLOGY AND INNOVATION

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ABSTRACT

In this scientific article innovative activity is considered, the essence and functions of innovation are analyzed. The article discusses relationships between the development of science, technology and innovation. The relevance, theoretical and practical significance of the solution of problems connected with the transition to a sustainable type of development of industrial production in the new conditions of management of the Republic of Uzbekistan. Exogenous variables, including the state of innovation, are investigated by him, taking into account the realities of industrialization in individual countries. Kondratiev assesses the state of organization of production and national economic planning, new reproduction proportions, deficit problems, labor quality, labor motivation, the scale of unemployment, domestic trade turnover, the level of prices, incomes, etc. The last decades of the problem of innovation, the transition to innovative economic growth have become the focus of attention of both foreign and domestic economists. Such features of innovative activity, such as high social and economic potential, individuality of innovations and a high degree of risk, necessitate a comprehensive study of this field of activity. It includes scientific, technical, organizational, financial and commercial activities and is an essential component of promoting innovations to consumers. Scientific research and development, being a source of new ideas, are carried out at various stages of the innovation process.

KEYWORDS: Investment, Innovation, Labor, Service, Management, Science, Technology
INTRODUCTION

Qualitative changes in the modern economy are demonstrated by the fact that there has been a significant regrouping of factors and sources that determine economic development. The decreasing opportunities of traditional resources for economic growth are related both to the approaching of the physical limits of their use, and to the decreasing efficiency and increase in the costs of environmental protection measures. This means that a system of innovative processes, scientific knowledge, new technologies, products and services should become the dominant in the development of the model of economic growth in the XXI century.

Innovation becomes an integral characteristic of the modern economy. This applies equally to both states and their societies, as well as to individual companies. An innovative orientation is an imperative not only of today, but also of the near future of human activity in any sphere.

Innovative activity of the economy is determined by the ability to distribute new products and technologies to all spheres, to win the corresponding markets. It depends on the economic structure, the level of scientific and technical and production potential, the organizational structure in which the innovation activity is carried out.

The innovation process is a complex, multilevel and multifaceted phenomenon represents the main driving force of the economy, materializing the advanced achievements of scientific and technological progress. To do this, it is necessary to create conditions conducive to the continuous improvement of technologies through innovations based on the latest scientific knowledge.

The last decades of the problem of innovation, the transition to innovative economic growth have become the focus of attention of both foreign and domestic economists. Such features of innovative activity, such as high social and economic potential, individuality of innovations and a high degree of risk, necessitate a comprehensive study of this field of activity. For Uzbekistan, the questions of the transition of the economy to the innovative path are especially relevant today. The relevance, theoretical and practical significance of the solution of problems connected with the transition to a sustainable type of development of industrial production in the new conditions of management of the Republic of Uzbekistan.

Scientific, technical and innovative activities are an essential condition for the development of innovative processes and the management of this area is one of the tasks of an innovative manager. Scientific and technical activities are connected with the birth, development, dissemination and application of scientific and technical knowledge. It includes: research and development; Scientific and technical education and training; Scientific and technical services.

RESEARCH BACKGROUND

Scientific research and development is a creative activity. Their goal is to increase the amount of knowledge about a person, nature, society, and the search for new ways of applying this knowledge. Scientific research and development covers: fundamental research, applied research, development.

Fundamental research - experimental or theoretical research aimed at obtaining new knowledge. Their result can be theories, hypotheses, methods, and so on. They can end with recommendations on conducting applied research, scientific reports, and publications. Unlike
fundamental research, applied research is aimed at solving specific practical problems. They are original works aimed at obtaining new knowledge, searching for ways to use the results of basic research; new methods of solving various problems.

Developments are works aimed at creating new products or devices, new materials, the introduction of new processes, systems and services or the improvement of already produced or put into operation.

Thus, research and development includes: design work, design works, technological work, development of prototypes, testing.

Objects of management in innovative management are the process of introducing innovations, the activities of government bodies and the financing of research and development. Innovative activity is a broader concept. It includes scientific, technical, organizational, financial and commercial activities and is an essential component of promoting innovations to consumers. Scientific research and development, being a source of new ideas, are carried out at various stages of the innovation process.

To study the problems posed in this paper, it is necessary to immediately define a number of concepts, such as «technical progress», «scientific progress», «scientific and technological progress». Technical progress is to improve the means of production and use, which provides an increase in labor productivity and a more complete satisfaction of human needs. The starting point of technical progress is scientific progress, the discovery of new laws, phenomena and properties of the surrounding world, mastering the methods and methods of its transformation in the interests of man.

Initially, it is carried out in the form of human accumulation of empirical knowledge about the phenomena and properties of nature, and then in the form of scientific knowledge. Scientific and technological progress is an essential factor in the production of products, which, due to the improvement of the means of production and technology, on the basis of the discovery by science of new laws, phenomena and properties of the surrounding world, the increase in labor productivity.

Scientific and technological progress is very complex, not only technical, but also a broad socio-economic and natural-scientific process. It consists, as it were, of two very different processes, which are closely intertwined; the line between them is, in a well-known sense, conditional.

Main part

One process is evolutionary, when the development of technology and technology goes without qualitative leaps, by improving the existing machinery and technology. Of course, this evolutionary improvement is effective, but the increase in efficiency is measured by the percentage. Evolutionary improvement of technology has clearly visible limits.

Another component of scientific and technological progress is revolutionary, when development takes on an abrupt nature; a transition is made to new generations of technology, to fundamentally new technological systems. Here the growth of efficiency is measured not in percentages, but in times.

Scientific and technological progress organically unites the development of science and technology. The transformation of science (that part of it that is connected with production, has a
direct effect on it) into direct productive force means that every next step in the development of technology rests on the scientific development that precedes it, that technological progress becomes the materialization of scientific progress. This applies both to the evolutionary path of development of science and technology, as well as to the revolutionary, embodied in the scientific and technological revolution. Scientific progress itself is now unthinkable without the use of new techniques for researching and processing data, installations, scientific instruments that embody the highest achievements of technology.

The periods of increased economic activity represent the periods during which the development of technology and the discovery of new resources create a favorable basis for the growth of economic activity and for the growth of investments. In such periods, the rate of technical progress is much faster than what one would expect in the ordinary operation of numerous inventions, each of which is of relatively little importance.

Every technological shift, according to modern economists, generates many large and small innovations and opens up new areas for the application of capital. Accelerated accumulation in new industries contributes to a long-term economic recovery. However, when the growth in production of new products leads to a saturation of the market and the demand for new goods falls sharply, the amount of capital involved in new industries during the period of active expansion of production turns out to be excessive. There comes a long depression, which can be overcome only as a result of the next technological breakthrough. The scale of innovation activity, therefore, varies periodically, and these changes occur in close connection with long-term fluctuations in the economic situation as a whole. The spasmodic nature of technological development determines the unevenness of economic development.

A particularly innovative discovery in economic science was made by the researcher N. D. Kondratiev at the beginning of the 20th century. For the first time in scientific economic thought, the scientist developed the theory of conjuncture and economic dynamics, which made it possible to justify the existence and functioning of the so-called «large cycles» or «long waves». He substantiated the idea of the multiplicity of cycles and divided them into short (duration 3-3.5 years), medium (7-11 years), large (48-55 years) long waves. Considered by Kondratieff, large conjuncture cycles (long waves) initiated a subsequent study of the causes of these cycles and their duration, and innovation was recognized as the most important reason. The concept of N.D.Kondratiev includes, along with «big cycles» and innovation theory as a subsystem or structural element of this economic process. The concept of N. D. Kondratiev includes, along with «big cycles» and innovation theory as a subsystem or structural element of this economic process.

German scientist G. Mensch linked the cyclical nature of the economy with the cyclical nature of innovations and the phases of development of new enterprises. He pointed to the moment when the production of new goods begins to exceed demand. Since that time, firms are looking for exits to foreign markets, the rate of profit is falling, less and less money is being spent on investments. Capital is directed to financial markets. Sooner or later, speculative financial operations reach a gigantic size, and the rate of profit in the monetary sphere falls below the rate of profit in industry. This means, according to Mensch, that the financial sphere is ready for investment in a real sector.
Among Russian scientists studying the problems of cyclicity and contributing to the development of many theoretical and practical aspects of this problem, we can name Yu.V. Yakovs and Ye.G. Yakovenko. Yakoves singled out the cycles and phases of the development of technology, and also carried out a periodization of scientific and technological revolutions. In the works of Yakovenko and his colleagues, the life cycles of products, the simulation of the cyclicity processes on micro-rouver, were considered. Many conclusions of these researchers can be used to develop mechanisms for regulating market processes, taking into account the life cycle of technologies, products and industries.

Among foreign economists, deep developments in this issue have Aires, Hirsch, Vernoy. They gave a classification of the stages of the life cycle of products, linking the stages with changes in a number of parameters: the used technology, investments, the market structure, the required labor resources, the supply and demand, the product uniqueness, the diffusion of innovations.

An important contribution to the development of the innovation theory can be considered the development economists of the concepts of technological developments. The concept of «technological mode» (in the modern sense of the term) was introduced into scientific circulation by S.Yu. Glazyev.

Technological structures are understood to mean large groups of technological structures related to each other with the same type of technological chains, within which a closed macroeconomic cycle is concluded, including the extraction of productive resources, all stages of their processing, and the production of a set of final products that satisfy corresponding to the type of public consumption. In accordance with this theory, economic development is achieved by the formation of new technological goals and the development of new technological structures. S.Yu. Glazyev and other economists distinguish five technological structures. The technological structure has a complex internal structure. Compressed it can be represented as follows.

1. The autonomous chain of the technological process of manufacturing of any products, combined with related technological processes in the supplying and consumer sectors, constitutes the aggregate of technologically coupled productions-technological aggregation, the cohesion of elements of which presupposes their technical one Homogeneity.

2. Linked by production cooperation, technologically adapted to each other and having a relatively equal technical level, they represent a complex of conjugated technological aggregates - a technological structure.

3. Basic technological aggregates form the core of the technological order.

4. Technological innovations involved in creating the core of the technological structure, were called «key factor»; Technological innovations that supply a key factor arise in the driving industries.

The growth of the driving industries depends on the spread of these technological innovations in the leading industries, which include industries that intensively consume the key factor and are best suited to its use.

They play a major role in spreading the new technological order, mass renovation of production. Technological structure in the dynamics is considered as a reproduction contour, within the framework of which successive redistributions of a certain set of resources are being carried out.
from the extraction of minerals to the production of end-use items. The technological structure is characterized by a unified technical system.

According to the theory of long waves N. Kondratiev, the scientific and technological revolution on a world scale is developing wavyly with cycles of about 50 years. In accordance with this, the evolution of the following five technological structures (waves) can be considered.

The possibilities for transition to a new long-term scientific and technical cycle depend significantly on the general level of development of science, technology and technology, the phase of the existing world technological wave, and the availability of long-term prospective research and development facilities. An analysis of historical development shows that research and development, which ultimately ensures the transition to a new long-term scientific and technical cycle, begins to be carried out at a time when the existing directions of technology and technology reach their greatest development, peak, or, according to Kondratiev, the crest of the long wave.

The unevenness of scientific and technological progress in different countries and various sectors of the economy is the main reason and the main consequence of the emergence of one country from another in technological and economic development. Deriving it from the cycles of scientific and technological progress, analyzed as one of the foundations of long waves of economic conjuncture, Kondratiev focuses on exogenous (internal) and endogenous (external) variables of scientific and technological progress. Exogenous variables, including the state of innovation, are investigated by him, taking into account the realities of industrialization in individual countries. Kondratiev assesses the state of organization of production and national economic planning, new reproduction proportions, deficit problems, labor quality, labor motivation, the scale of unemployment, domestic trade turnover, the level of prices, incomes, etc. The study proceeds from an understanding of the situation as a change in the conditions of economic life in the country, which is found in the domestic market and directly influences the nature of scientific and technological progress.

N.D. Kondratiev showed that innovations are distributed at times unevenly, appearing as groups, or clusters. Thus, in the studies of N.D. Kondratiev, the basics of the cluster approach are first examined.

A common notion for most researchers of the cyclicity problem is the concept of a cluster of innovations (developed by M. Porter, from the English cluster - package, service, unit), which is key in economic theory to explain the relationship between the unevenness of innovations, with one Side, and tendencies of changes in the general economic conjuncture, on the other. The origin of the cluster is related, in the opinion of some Western economists, first, to the «echo effect», when the dynamics of the number of basic innovations with a certain lag repeats the dynamics of the number of basic scientific discoveries. Scientific revolutions lead to a spasmodic increase in the volume of fundamental knowledge and, thus, contribute to the uneven entry into the economy of basic innovations. Secondly, the emergence of the cluster is explained by the regularities of the movement of consumer demand for innovations. Thirdly, for the emergence of a cluster, both a long-term improvement in the general economic situation and the absence of barriers to the creation and introduction of new technologies in a fairly broad group of sectors and sectors are necessary.
CONCLUSION

The theory explains the formation of the advantages of the national economy due to the fact that one competitive industry helps to create another in the process of mutually reinforcing relations, since such an industry is the most demanding buyer of goods and services on which it depends. When a cluster is formed, all the enterprises in it begin to render mutual support to each other, as active competition in one industry extends to other branches of the cluster, accelerating its development; Stimulates research and development work, increases the skills of specialists, there is a free exchange of information, as well as the spread of innovations through the channels of suppliers and consumers, which generates new opportunities. Cluster becomes a means of overcoming isolation on internal problems, inertia, and inflexibility.

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INVESTMENT PROCESSES AS THE DRIVING FORCE OF ECONOMIC DEVELOPMENT OF THE REGION

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ABSTRACT

The article analyzes the main directions of investment processes and their role in accelerating the development of the economy in Namangan region. The positive tendencies in the economic development and investment processes in Namangan region are highlighted. Therefore, the measures taken within the framework of the Action Strategy for the five priorities of the Republic of Uzbekistan for 2017-2021 include the identification of long-term goals as well as the identification of ways and means of achieving these goals. Among them, it is important to move the production on the basis of modern technologies and to continuously increase efficiency. In 2017, the company exported products worth $ 196.6 million. The share of exports of raw commodities in foreign trade is decreasing and the share of finished goods is growing steadily. Foreign economic relations of the region are carried out with more than 80 countries of the world. Further liberalization of the economy creates conditions for the diversification of investment activity of business entities and entrepreneurs. Effective policy making and significant measures to expand real investment in all sectors of the economy have been yielding positive results.

KEYWORDS: Investment, Structural Changes, Economic Policy, Decentralized Investment, Gross Regional Product.
INTRODUCTION

Structural Developments in the Economy in our country modernization of all spheres of the economy is primarily based on investment processes and requires significant investment resources. Therefore, the measures on extensive mobilization of internal and external sources of investment financing are underway. Further liberalization of the economy creates conditions for the diversification of investment activity of business entities and entrepreneurs. Effective policy making and significant measures to expand real investment in all sectors of the economy have been yielding positive results.

As you know, the investment process is aimed at increasing the competitiveness of the national economy, increasing the efficiency of production in the regions and enterprises. At the moment, high GDP growth, employment growth and high macroeconomic indicators are required to meet substantial structural changes and increase production efficiency. Therefore, the measures taken within the framework of the Action Strategy for the five priorities of the Republic of Uzbekistan for 2017-2021 include the identification of long-term goals as well as the identification of ways and means of achieving these goals. Among them, it is important to move the production on the basis of modern technologies and to continuously increase efficiency.

The strategy focuses on the rational use of raw materials in the regions, the accelerated development of industry, the introduction of innovative technologies, and ensuring the competitiveness of products at domestic and foreign markets. As a result of the use and implementation of production technologies of the developed countries in the developed countries, radical changes took place in the regional industry, consistent implementation of new product lines and creation of new jobs.

An important feature of the current economic policy is the consistent continuation of efforts to expand access to private business and further improve the business environment. In particular, a number of laws and regulations have played a crucial role in establishing strict compliance with law enforcement, regulatory bodies and administrative structures to eliminate unlawful interference in entrepreneurship activity, and increasing the responsibility of managers and officials of these agencies. The principle of the priority of the rights of entrepreneurs in the interaction with the state, law enforcement and supervisory authorities has been introduced. The principle of the priority of the rights of entrepreneurs has been introduced in relations with the state, law enforcement and regulatory bodies. In particular, amendments and additions were made to normative-legal acts on simplification of business entities' and their simplification.

In Namangan, positive tendencies in economic development and investment processes remain and remain steadfast. In 2017 the total volume of investments into fixed capital of the region is 3052.0 billion sums. or 103.7% to the level of 2016. The share of investments in fixed capital in GRP was 28.9 percent and decreased by 0.8 percent in 2016 (29.7 percent).

Main part

The centralized investment into fixed capital in the region in 2017 will amount to 1233.8 billion sums. The growth rate was 37.0% (40.4% in the total volume). The volume of unplanned investments in 2017 amounted to 1818.1 billion sums, growth rate - 89.9% (59.6% of the total volume). As it is evident, investment in the region is rapidly expanding. Total area of 1078.9 sq. M. (94.3 percent to 2016), including 783,900 square meters of housing (83.8 percent) in rural
areas. Out of the total volume of investments in non-production sphere, 841.6 billion sums or 53.4% were used for housing construction. 48.8 billion sums were allocated for the construction and reconstruction of general education schools, preschools, music and art schools. Investments in the amount of UZS 1 billion were used. This accounted for 3.1 percent of total investment in the non-production sector. In the construction and reconstruction of health facilities, 50.3 billion sums were allocated. In the reporting period, investments in non-production amounted to 3.2%.

272.9 km of drinking water and 6.6 km of gas pipelines were commissioned in the communal construction sector, which is 102.2% and 17.8% respectively, compared to the end of January-December 2016. 2875.5 million sums were channeled to the construction of drinking water networks and 82.7 million sums to the construction of gas networks. Investments in the amount of UZS 1 billion were used.

As a result of the investment process, the region's economy has been steadily rising. The gross regional product (GRP) produced in 2017 will amount to 10 552.5 billion sums (sums), which is by 4.2% more than in 2016.

CONCLUSION

The positive results of the investment processes are also reflected in the volumes and structure of exports of the region. In 2000, the region exported $ 75.3 million to foreign markets, while in 2010 this figure was $ 119.5 million. In 2017, the company exported products worth $ 196.6 million. The share of exports of raw commodities in foreign trade is decreasing and the share of finished goods is growing steadily. Foreign economic relations of the region are carried out with more than 80 countries of the world.

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FEATURES OF THE NATURAL-INDUSTRIAL CONDITIONS OF THE ZONE AND OPERATION OF MACHINE-TRACTOR UNITS

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ABSTRACT

In a paper the basic questions agro technical and plant-performance figures of the machine-tractor aggregate at expense of correct selection of sample pieces and safe maintenance of pneumatic are considered buses. To exclude it, especially when exceeding 20% soil moisture and its poor bearing capacity, it is recommended to install tires with a wide profile on the equipment. Also, it would be useful to use additional wheels with a special device that is fixed to the main on the mounting stud. The chamber is made slightly smaller than the internal profile of the tire, and therefore, after filling it with compressed air, it fits snugly to the inner surface of the tire, giving it the appropriate shape and elasticity. Thus, the complex of operational properties of the tire should reflect the degree of its compliance with the purpose of the machine and the conditions of its operation.

KEYWORDS: Running systems, a tractor, row-spacing’s, flotation ability, smoothness of a stroke, reliability, weight-lifting capacity, fabric ability, slipping, twin wheels, pneumatic buses, a type cover, abroker, a tread, a framework.
INTRODUCTION

One of the main tasks of modern agricultural production is an increase in output based on the comprehensive mechanization of all processes.

To perform these tasks, it is necessary to equip agricultural production with machines of the greatest possible productivity with high reliability and durability during operation.

In the system of machines for the cultivation and harvesting of cotton, the main energy is tilled tractors of class 0.9 and 1.4 tones, and the most established width is 0.6 and 0.9 meters between rows. Tractors are completed with tires of a narrow series (type 9.5 - 42Я- 183), an average series (type 13.6R38 YAR - 318, 15.5-38 I-166) and a wide series (type 18.4 / 15-30 R -319). In the future, the use of wide-range agricultural machines is incorporated into the system of machines.

The main characteristics of the tractor's undercarriage systems are values that significantly affect the technical level of the tractor material consumption, traction efficiency, through put, smoothness, reliability, load capacity, manufacturability, impact on the soil.

From agro technical qualities for tractors we choose those that depend on the wheels on pneumatic tires. - specific pressure on the soil; - ground clearance of the tractor; - permeability in mountain conditions; - cross-country pass ability of row crops; - straightness of the course between the rows; - manageability; - smooth ride.

RESEARCH BACKGROUND

Tire with a wide profile to prevent slipping. Towing the drive wheels is a frequent occurrence when working on a tractor. To exclude it, especially when exceeding 20% soil moisture and its poor bearing capacity, it is recommended to install tires with a wide profile on the equipment. Also, it would be useful to use additional wheels with a special device that is fixed to the main on the mounting stud. However, it is very important that the pressure in the auxiliary tires is 0.02 MPa lower than in the main tires. The use of twin wheels will reduce the likelihood of slipping by 30% and will reduce fuel consumption by 15%.

Main part

Tires for tractors and combines: Pneumatic tires that are worn on the rim of tractor wheels consist of two main parts - tires and a camera.

The tire consists of a frame (Fig. 1 a, c), a cushion layer (breaker) 2, a tread 3, two sides 4.
Frame - the main part of the tire. It is made of several layers of durable rubber-coated on both sides of the cord superimposed one on the other - a special type of fabric made of twisted yarns of cotton, viscose, nylon, etc.

In some tires, called diagonal, the cords are arranged at an angle to each other (Fig. 1b), in others, called radial, the threads are arranged in parallel (Fig. 1, c). The number of cord layers in the frame is made from 4 to 18, depending on the load on which the pneumatic tire is calculated.

Pillow layer 2 (breaker) consists of rubber or rubber cord and is designed to protect the frame from shocks and bumps.

The protector 3 serves to grip the tire with the road. Rubber treads made durable, with high resistance to abrasion.

In order to create a good grip on the drive wheel with the road, on the treads of the tractor tires, they make a drawing with massive star chains separated by wide and deep grooves.

On the treads of the guide wheels make the pattern in the form of longitudinal ribs with wide grooves.

Boards 4 are rigid parts of a tire designed to fasten a tire on a wheel rim. Stiffness is created by wire rings 5 made of twisted steel wire or solid rubber cords wrapped in rubberized fabric.

The chamber is a ring closed tube made of highly elastic rubber with a thickness of 1.5 to 5 mm, depending on the size of the tire. A valve is installed in the chamber with which it can be used to pump or release compressed air into it. The chamber is made slightly smaller than the internal profile of the tire, and therefore, after filling it with compressed air, it fits snugly to the inner surface of the tire, giving it the appropriate shape and elasticity.

The valve (fig. 1 g) consists of a body and a spool 7 installed inside it. The body is covered with a cap at the top 6. To fill the chamber with fluid to increase the wheel grip force, use a special
device with a locking screw. This device is installed on the valve, after removing the cap and valve from it.

Air pressure in a pneumatic tire has a significant impact on its durability. The springing effect of the pneumatic tire depends on the load on it and the internal air pressure.

Normal pressure - the pressure recommended by the manufacturer provides the most advantageous tire deformation during tractor operation, reduces the fatigue failure of the frame threads and provides good traction of the wheel with the soil (Fig. 1 a).

Increased pressure makes the tire more sensitive to shocks and cuts when hitting obstacles, speeds up the process of "fatigue" of the frame, which leads to its premature rupture. The adhesion of the wheel to the soil is deteriorating (Fig. 1 d,II).

Low pressure increases the spring tension and deformation of the tire, as a result of which the frame quickly fails (fracture, delamination, the appearance of through cracks), and the adhesion of the wheel to the road on hard ground deteriorates (Fig. 1d, III).
The tire is written 15.5 R 38, which means: the width of the tire profile is \( b = 15.5 \) inches, the fitting diameter of the tire on the wheel rim is \( D = 38 \) inches, the R-tire is radial (from the word Radial).

An important distinguishing feature of tires is their model. It characterizes the design of the main features, and in the first place, the tread pattern [1].

**CONCLUSION**

Technical requirements for tires determine, ultimately, their performance. The tire, interacting with the supporting surface and machine components, greatly affects the operational performance of its work. Thus, the complex of operational properties of the tire should reflect the degree of its compliance with the purpose of the machine and the conditions of its operation.

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ABSTRACT

The article examines the process of strengthening the food orientation of agriculture, as well as the possibilities of developing production and increasing the export potential of horticulture, viticulture and vegetable growing in the Namangan region of Uzbekistan. Researchers point out difficulties in product sales. Wholesale buyers of the domestic market and large processors purchase products at unreasonably low prices, due to their monopoly position and insufficient development of wholesale trade channels. In addition, the production infrastructure is mainly funded by the state, there is a market infrastructure for selling products of the industry, there is a steady demand for the products of the industry in the domestic and foreign markets. It should be noted that both in the country as a whole and in the Namangan region the technical and technological lag of agriculture has not yet been overcome.

KEYWORDS: Orientation, Unreasonably, Viticulture
INTRODUCTION

The strategy for further development of the Republic of Uzbekistan in 2017–2021 provides for deepening structural changes and consistent development of agriculture, further strengthening the country's food independence, expanding the production of environmentally friendly products, significantly increasing the export potential of the agricultural sector, as well as optimizing the acreage by reducing crops cotton and cereal, placement on the released areas of potatoes, vegetables, food O, oilseeds new intensive horticulture and viticulture (1).

Since 2017 in Uzbekistan, agriculture is increasingly focused on ensuring food security and the well-being of the rural population. The decree of the President of the Republic of Uzbekistan “On measures to further ensure the food security of the country” clearly outlined the further actions necessary to fully meet the demand of the population for high-quality food products accessible to the population (2).

As it is known, Uzbekistan has favorable conditions for the production of fairly competitive agricultural products, including fruits and vegetables, fruits and grapes. In 2018, Uzbekistan produced 6124 thousand tons of grain, 2300 thousand tons of raw cotton, 8661 thousand tons of vegetables, 1607 thousand tons of melons, 2411 thousand tons of potatoes, 2100 thousand tons of fruits, 1314 thousand tons of grapes, 18 thousand tons of cocoons. According to official data, per capita consumption of vegetables per year exceeds 270 kilograms, fruit - 140, potatoes - 55, meat and meat products - 40, sugar - 30, eggs - 210 pieces, milk and dairy products - 270 liters, vegetable oil - 25. According to the recommendations of the World Health Organization, the consumption rate of fruit and vegetables for an adult is 400 grams per day. It means, according to this indicator, in Uzbekistan, the residents are provided with a diet five times higher than this rate.

However, the export potential of the industry is not fully utilized. In 2017, 860 thousand tons of fruits and vegetables were exported for $ 620 million, that is, less than 4 percent of the total production. In 2018, exports were made in the amount of 1 million tons and by 1 billion dollars, and in 2019, exports should increase by 1.5 times. The measures taken in recent years make it possible to achieve this. In 2017, within the framework of the implementation of the Strategy of the priority directions of development of the Republic of Uzbekistan, 13 thousand hectares of intensive gardens and 7.3 hectares of vineyards were created in the country, 15.4 thousand hectares of gardens and 9 thousand hectares of vineyards were reconstructed, 147 projects fruit, vegetables and meat in the amount of $ 147 million. This was due to the reduction of the area under cotton by 49 thousand hectares and under wheat - by 10 thousand hectares. In addition, the area of potatoes increased by 8.1 thousand hectares, vegetables - by 27.2 thousand hectares, intensive orchards - by 5.9 thousand hectares, vineyards - by 2.9 thousand hectares, oilseeds - by 4 thousand hectares. President of the Republic of Uzbekistan Sh. M. Mirziyoyev repeatedly stressed the need to continue structural reforms in agriculture and growing export-oriented crops in the liberated areas that are in high demand in both the domestic and foreign markets.

RESEARCH BACKGROUND

Thus, there is a diversification of agriculture with an increase in the share of food products. It should be noted that in 2016–2018 land areas under cotton significantly decreased in Uzbekistan. In 2018, 2,300 thousand tons of raw cotton were produced, which is 1.5–2 times less than the
volumes of previous years. In the structure of agricultural production, there is more food and, although so far to a lesser extent, forage crops.

The creation and effective functioning of specialized farms, the priority orientation of family dekhkan farms to horticulture, vegetable growing and viticulture, the acceleration of agro-industrial integration processes in the industry (farmers are setting up industrial processing of their own products) will have a tangible socio-economic effect. These businesses are, by their nature, susceptible to innovation. All this is supported by the positive trends in technological renewal, the rapid growth in bank lending to business entities of the industry, and the annually observed trend in reducing the tax burden on private business. In addition, the production infrastructure is mainly funded by the state, there is a market infrastructure for selling products of the industry, there is a steady demand for the products of the industry in the domestic and foreign markets. In addition, since November 1, 2018, exports of the industry’s products are almost completely free — prepayment is canceled, the export contract is mandatory and registered, customs procedures are simplified and, also very important, the state has abolished the monopoly of several state economic entities for the export of fruits and vegetables.

The revival of traditional agricultural sectors can be seen in the example of sericulture. It creates a single organizational chain, which incorporates all the processes - from ensuring the food supply to the production of finished products. 600 hectares of land were allocated for strengthening the food supply, growing mulberry seeds and creating nurseries, and special farms were created. The total area of mulberry plantations, the leaves of which are food for the silkworm, is 45.7 thousand hectares. In the autumn of 2017 and in the spring of 2018, 25 million mulberry seedlings were planted throughout the country. Another 39 million shrubs have been shipped from China. The export volume of the industry in 2016 was 22 million dollars, and in 2018 it exceeded 50 million dollars. Employment in the processing sector of the industry in 2018 reached 15 thousand workers. 2 - 3 years ago, it did not exceed 2 thousand people.

Main part

Improving the efficiency of agricultural industries in modern conditions is based on the use of intensive factors and on improving the land reclamation condition. In 2019, 1.7 trillion soums from the state budget will be allocated for these purposes and 84 million dollars of funds from international financial institutions. In 2019 - 2020, stable irrigation of 1,200 thousand hectares will be ensured, savings of 1,700 million cubic meters of water per year, ameliorative condition of 600 thousand hectares will improve. In 2019, a number of investment projects are planned to be implemented in the agricultural sector with a total value of 1,870 million US dollars.

In the Namangan region in 2017, the area under vegetable crops amounted to 194 thousand hectares, i.e., they became comparable to the areas under cotton and grain. The yield of vegetable crops grows from year to year. In 2017, the gross yield amounted to 10.1 million tons, which is 44.8 percent more than in 2013. However, in the area of crop yields, factors such as poor equipment, which is associated with a lack of investment in the industry, shortage of irrigation water and the practical absence of using irrigation water saving technologies, in the foothill zone are mainly used irrigation using electric pumps, which significantly increases the cost of production. In 2018, in the Namangan region, work was carried out on the implementation of 360 projects directly or indirectly related to the expansion of the export potential of the region's food complex.
It should be noted that both in the country as a whole and in the Namangan region the technical and technological lag of agriculture has not yet been overcome. The material and technical equipment of the industry does not meet modern requirements, there is a shortage of specialized equipment, its prices are inaccessible for the main part of agricultural producers, the need for mineral fertilizers and biological and chemical protection are not fully met, monopoly high prices are set, modern agricultural technology is replicated slowly.

Researchers point out difficulties in product sales. Wholesale buyers of the domestic market and large processors purchase products at unreasonably low prices, due to their monopoly position and insufficient development of wholesale trade channels. Voluntary-compulsory consolidation of producers to large purchasers of their products and the necessity of preliminary conclusion of supply contracts negates the marketing activities of product manufacturers. Structures that have no direct interest in production results are engaged in the study of foreign markets. Difficulties remain in the delivery of products to distant consumers.

**CONCLUSION**

Storage capacities, despite their accelerated expansion, are not yet sufficient for long-term storage of products in large volumes, which forces the manufacturer to sell its products at low prices and reinforces the seasonal nature of production and the imbalance between supply and demand in the market (4). Eliminating or mitigating the above factors will significantly contribute to a fuller realization of the export potential and potential of the regions in the production of food products for agricultural production.

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ABSTRACT

For the survival and growth every organization should be capable to translate its plans and programs enhancing performance. Nepal Airlines Corporation (NAC) was incorporated on 1 July 1958 through enactment of Nepal Airlines Corporation Act. 2019, with main objective to provide air transport service to any person, agency, or organization who need such service for transportation of men and materials from one airport to another either within or outside the country. Nepal Airlines started glorious aviation landmark of airlines business with its DC-3 Docota within 97 employees and still was remarkable development in 1990. The national flag carrier has been suffering from the operational loss for the last few years. In this context this article explores the capacity and performance level of NAC and discusses its major challenges. For the discussion, about capacity utilization, scheduling and planning, reliability and punctuality, passengers flow on the based on NPM theory assumptions, secondary data are obtained from NAC offices and some of the key personnel of the NAC are also interviewed. The findings show that there are still important roles of NAC for air service delivery system, economic development, improving tourist flow, which however, also facing problem of fleets, lack of smart management, lack of proper attention of government and politics.

KEYWORDS: Nepal Airlines, Performance, Capacity, Challenges, Nepal
INTRODUCTION

1. Background

After the world war-II, numerous states owned enterprises were created in both develop and developing countries to address market deficits, reduce capital shortfalls, promote economic development, reduce mass unemployment or ensure national control all over the economy of the country (U.N, 2005 P. 3). Nepal was also not exception for establishing such entities. Nepal establishes more than five dozens of such enterprises up to the late sixties. Nepal Airlines Corporation(NAC) the existing Royal Nepal Airlines (RNAC) was one of these corporations related to airlines which has been established in Nepal primarily with a view to improve the socio-economic condition of the country through air transport service. The strong air travel growth in the global economy helped air travel deregulation and technology to promote more connectivity between cities. (Airbus, 2009).

NAC the then RNAC was established by special Act, 1962 on July 01, 1958 as the national flag carrier. It has been considered as the geographical and cultural bridge connecting Nepal within and beyond the country. Initially it started glorious aviation landmarks of airlines business with its DC-3 Docota with 97 employees in 1958. From 1958 onwards fleet expansion process accelerated till the induction of two jets-Boeings 757 in the year 1987 and 1988 in its fleets, totaling 19 aircrafts including few other twin otters, Avro, Focker and a couple of Boeings 727. The airlines were on growth stage till 1990 which was also marked as golden era in the history of the airline in Nepal. During that time it had four jet aircrafts, three Hawker Siddeley (HS), four Avro, ten Twin otters and two Pilatus porters. The airlines had spread its wings from Japan in east to Europe in west as international sector and also made 40 domestic operations within the country. It is also customary with RA to have the air business ups and downs as RA decided to stop its Europe Operation in 2001. Later withdraw the number of flights in Frankfurt (FRA), London (LHR) and Peris (CDG) by the year 2001. In addition RA also was stopped to operate flight to Osaka. Shangaiand japan which was operating over 13 years. Furthermore the flight to Colombo (CMB), Rangoon (RGN) Karachi(KHI),Dhaka (DAC) and Male (MLE) sectors were also stopped Besides national flag carrier used to provide chartered flights for UN and British Gorkha-Regiments was also stopped. It was obvious that curtailment of such international flights put RA in critical position for its sustainance. On the other hand, the liberalization policy in the airline sector also affected RA in critical position to compete with other international airline services. At present, RA has been operating in eight international destinations. It is also pity that RA occupies only four aircrafts for international flights. Of them one is 30 years and the other 32 years old. In addition RA has three twin otters, two MA60, and two more 2Y12 in the inventory. At present,NAC has been running with a small number of aircrafts to operate in domestic or international destinations. In this content it is also interesting to what extent NAC has been performing which enable to sustain and maintain regular services to its clients. For the purpose of writing this article the financial and operation performance of RA has been reviewed. In addition, some of the key informants were interviewed. The secondary information was triangulated with primary information for substantiating the factual information.
2. Understanding Airlines performance

There is ongoing debates and discussion among the researchers and academics with regard to the performance management of public sector entities (Gautam, 2012, p. 202). Aviation plays a significant role in the world as it supports social and economic development in both emerging and established nations. Air travel deregulation and technology have allowed more connectivity between cities (Air bus, 2009). International air passenger transport is an important factor in facilitating trade and development of others sectors of an economy. (Gonenc and Micoletti (2000) quoted in (piermartini, R. & Rousova, L. 2008) cited by Kankaew K. (2004). Trace, Keith, FrielingBarend, Hew Denis (2009) also mentioned that improved air connectivity through air transport links which is an essential components of economic growth, tourism growth, trade growth and so on as it provide personal access to the regions for business, social or recreational purpose as well as physical access to resources and markets. Improved access allows producers to take advantages of an expansion of trade, commerce, economics of scale and specialization (Kankaew, P.1, 2014).

Owing to the fast economic growth, people have gained improved opportunities to enjoy national and International tours and business. Rapid economic growth and the deregulation of commercial airlines market worldwide have driven growth in air passenger transportation. Public enterprise (PES) in most of countries of the world, so as also in Nepal were created to accelerate, economic and social development but main issue in Management and organization is corporate sustainability which includes organization performance. Organization performance is one of the strategic issues for any management. Therefore it is needed for airlines to focus on service quality if the airlines aspire to improve on market share and further enhance financial performance in Domestic and international Market (Albrecht and Zemke, 1995).

In this back drop productivity of Airlines depends on the capacity utilization performance, operational performance, Flight scheduling and planning, on time performance. Employee satisfaction, capacity of operation, human resource planning and management and some of the natural phenomenon which is directly related with airlines performance.

Globally, 2000 Airlines operating more than 23,000 aircraft, providing service to over 3,700 airports around the world (Aerospace Global Report, 2011 & AIO-2006, P.2). In 2006, there were 28 million scheduled flight departures and carried other the two billion passengers. The growth of world air travel has averaged approximately 5% per year over the past 30 years with annual growth in air travel which would be double over next 10-15 years (AIO, 2006, P.2).

The aviation industry is, by its very nature a global industry or large growing industry, facilitating economic growth, world trade, international investment and tourism so that central to the globalization taking place in many other industries. In order to survive and be prosperous in this sector, airlines have recognized the need for radical change. The new trends emerging in the aviation industry in global scenario are the increased globalization of economics, liberalization of aviation policies, new technological developments in civil aviation.

Over the last decades, the airlines accumulated massive financial losses along with crippling debt arrears from it failure to the service. Its loans and sustain its operation. (Ochieng, M.D. & Ahmed. A. H, 2014).
Performance Management (PM) denotes with achievement of goals or results. Research has shown that large numbers of organizations rely mostly on output Performance measures which include sales volume, sales growth and profitability (Asiegbu& et al., 2011). Performance involves also the economic concept of creation of wealth or value to the organization. Thus, performance is a relation between cost (operation cost of the organization) and the value of benefits obtained (Lorino, 2001). Performance is a multi-dimensional concept. In case of Airlines performance should be compared with the achieved result. Nepal airline is considered as ‘A’ class public enterprise should demonstrate success which could be a model to other enterprises.

Performance of Airlines depends up on the trend of aircraft utilization, aircraft availability, aircraft designs, fleets, resources utilization capacity, flight schedule planning and operational capacity, organization capacity and management commitments, organization leadership, organization politics, state policy towards the aviation Industry/Airlines operational capacity, trained and skillful manpower, human resources planning and others. In addition age and modality of the aircraft, employees satisfaction, motivation and moral of the employees, organization philosophy, civil aviation policy of the nation also contribute its performance.

3. Indicators of Performance

The International Air Transport Association (2003) uses many performance indicator to track the annual performance of its member airlines these performance measures can be a Operating performance, financial performance, passenger follow or load factor, capacity utilization, passenger revenue tariff, operating efficiency or reliability and punctuality. Despite NAC is a class enterprise issues raised from different corners about its performance. Some of the key issues as follows:

I. Financial Performance

Financial performance occupies a significant place in the performance evaluation of Airlines. Financial profitability, with regard to financial performance evaluation, shows its "ability to earn profits proves a measure of its market strength, its ability to keep down costs. Profitability also affects the amount of investment, for much industrial investment is financed out of reinvested profits, and hence the contribution of the firm to the overall growth of the economy " (Killick, 1983:183) Similarly, Mary M. Shirley (1983:30) argues that "profit is a composite indicator that applies positive weights (price) to benefits (outputs) and negative weights to costs (inputs). If the prices are correct, a profit maximizing firm strives to achieve maximum benefits for minimum costs - the definition of efficiency. "Financial profitability is thus a simple and straightforward indicator which indicates the extent of success of an airlines .The Nepalese PEs have been largely criticized on the ground of financial performance. Despite the huge capital investment these enterprises have not been able to reveal satisfactory increase the volume of outputs to a given level of inputs. With regard to economic performance, a variety of indicators, such as capacity utilization, capital-output ratio, labour-output ratio, labour-administrative cost per output, etc. can be adopted.

II. Economic Performance

Economic performance provides a firm base for measuring the performance of NAC which shows the result, i.e., ability to increase the volume of outputs to a given level of inputs. With
regard to economic performance, a variety of indicators, such as capacity utilization, capital-output ratio, labour-administrative cost per output, etc., can be adopted.

III. Capacity Utilization

Capacity utilization is an important indicator in course of performance evaluation. Economic efficiency of an enterprise, indeed, depends much upon the capacity utilization. It has been well realized that the capacity of the enterprise has to be utilized to its maximum in order to improve the performance. However, the capacity utilization rate of the NAC has not increased significantly over the past few years. A World Bank report (1979:25) has stated that the average capacity utilization rate is below 60 percent and this was regarded as one of the major causes for the poor NAC performance. It is noteworthy, while analyzing the capacity utilization rate on the individual enterprises, to note that there are variations in the capacity to use its potential capacity.

IV. Capital-Output Ratio

The capital-output ratio of NAC is also regarded as not being at a satisfactory Capacities of the enterprises have been utilized below to their optimum capacities. Capital-output ratio, labour productivity ratio, and value added-employee ratio have not been improved as desired by the government on the one hand and the enterprises on the other. These could be identified as the convincing reasons for the poor economic performance of NAC.

V. Distributional Performance

It has been clearly mentioned in the various periodic plans that one of the basic reasons behind creating NAC in Nepal is to generate employment opportunities and also reduce regional economic imbalances. It can, therefore, be observed that NAC is expected to pursue social objectives rather than the economic ones. It is more often noted that the "non-economic" considerations dominate the "economic" ones.

4. Analysis and discussion

I. Utilization of aircraft (fleet wise in HRS:)

Aircraft utilization is a key performance indicator for airline operations and a significant differentiator for same business models. Aircraft utilization is a function of a number of elements, including aircraft design, features and characteristic, Airlines maintenance programs, aircraft technical reliability, airlines business philosophy, market demand characteristics and availability of trained and skilled labor. The status of aircraft utilization of NAC as against the revenue generation is still not very satisfactory as given in Table 1.

<table>
<thead>
<tr>
<th>Fleet</th>
<th>B-757&amp;A-320</th>
<th>Annual operation (in days)</th>
<th>Total flights hours</th>
<th>Average per day flight HRS</th>
<th>Maximum per day fit HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>9N-ACA</td>
<td>250</td>
<td>3,602.86</td>
<td>14.41</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>9N-ACB</td>
<td>179</td>
<td>1,808.33</td>
<td>10.10</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>9N-AKX</td>
<td>185</td>
<td>1,387.27</td>
<td>7.49</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>9N-AKW</td>
<td>251</td>
<td>1,836.44</td>
<td>7.37</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Source: Engineering Department NAC, Management, 2016
The above Table 1 shows that the aircraft of NAC utilization was calculated as the sum of block-to-block hours divided by aircraft days available. As per the standard set by ICAO the aircraft utilization on the basis of monthly and annual NAC stands much lower level. According to the definition, utilization of an airframe is calculated as a sum of block-to-block times of all flights which were realized during the observed period of time, i.e., the numbers of days in the month. Afterwards, for each aircraft daily value of utilization is calculated as sum of block-to-block times divided by the numbers of days in a month. Depending of the types of utilization analysis grouping, i.e., range, aircraft type, business model, Airlines philosophy and market segment, a medium value for all airframes per month was calculated and adopted as a representative utilization value for benchmarking.

Capacity utilization is an important operational metric for airlines business and it's also a key economic indicator applied to aggregate productive capacity. Capacity is an important for assessing a company's current operating efficiency and it's helps to illuminate cost structure in the short term or long terms. A company with less than 100% utilization can theoretically increase production without incurring expensive overhead costs associated with purchasing new equipment or property.

From above table, the NAC has been operated it's four aircrafts in different sector during the period of 14April 2015 to13AprilL2016. The above Table 1 Shows that its maximum flights operation was 251 days per year and 14.41 hours for per day in operation and minimum for 179 days per years and 7.31 hours per day in the operation. NAC had been operating its aircraft since 32 years which is quite surprising to use such old age aircraft in international sector. Among the Boeing aircraft and airbus utilization rate the Boeing aircraft has higher rate of flight than the Airbus though Airbus is newer than Boeing.

Airlines operational plan aim to maximize profitability. Aircraft utilization is a key indicator which can be used to optimize planning for airlines schedules and thus increasing profitability. According to data given in Table 1 can be said as the number schedules of operating flights and Aircraft type, features, characteristics, maintenance programs airplane technical reliability, airlines business model or philosophy, market strategy, Demand, characteristics and availability of trained skillful main power plays important role for making profit.”

Optimizing airplane utilization, which includes efficient airplane turn-time at the gates, can help an airline maximize the large capital investment it has made in it's airplanes. Efficient airplane utilization requires close coordination among the airline's own fleet planning, schedules planning, passenger reservations, flights operation, ground operations and airplane maintenance system as well as with air traffic controllers and Airport authorities.

Low capacity utilization is concerned both for fiscal and monetary policy and its effective implementation still NAC is lacking for proper management, operation and utilization of aircraft operation which need serious concern for its development.

II. On time flight Performance/ Maintaining schedule

On time performance is a measure of the ability of transport services to be on time. Almost all transportation systems have time tables, which describes when aircrafts have to arrive at scheduled stops. Transport services has higher utility where services run on time as anyone planning on making a use of the service can align their activities with that of the air transport
service system. On time performance is particularly important where service should be frequent that helps to people to maintain their time/schedule.

Usually airlines are closely monitored on their on-time performance. Typically on time performance is measured by comparing each service with its flight schedule. The on time performance is a key dimension of airlines quality. Airlines can choose to incur higher costs in order to improve on time performance. In this research we try to find out what's the actual on-time performance situation of NAC? What is the punctuality and Reliability ratio of NAC flight?

Table 2 shows the on-time flight performance of NAC

| TABLE NO.2 ON TIME FLIGHT PERFORMANCE: (ONLY KTM STATION) IN 2015/16. |
|------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Fleet B-757 & A-320    | Proposed number of flight | OPTD | Aircraft Change | ON Time | Delays | Cancelled | Reliability (%) | Punctuality (%) |
| 9N-ACA                 | 410                      | 390  | 03              | -     | 08    | 227       | 163             | 16              | 94.87           | 61.79           |
| 9N-ACB                 | 186                      | 185  | 05              | 01    | 05    | 118       | 67              | 04              | 86.75           | 57.55           |
| 9N-AKX                 | 226                      | 231  | -               | 01    | 08    | 182       | 49              | -               | 100.00          | 83.64           |
| 9N-AKW                 | 318                      | 309  | -               | 10    | 02    | 260       | 49              | 01              | 94.44           | 85.97           |
| Overall                | 1140                     | 1115 | 08              | 12    | 23    | 787       | 328             | 21              | 95.24           | 72.23           |

Source: Operations Department of NAC, Management, 2016

The above table No.2 shows that NAC operations, Engineering & planning division proposed overall number of 1140 flight from KTM Station annually while 97 percent flight schedules were maintained and only three percent flight schedules were not maintained. All together 12 Aircrafts had been changed in that operation duration. Overall 787 No. of flight were departed on time, all together 328 No. of flight was delayed and 21 No. of Flight were cancelled due to different reasons. The Reliability rate of overall flights of this duration was 95.24% and punctuality rate was 72.23% NAC operated above all flight by their 4 Aircraft B-757 (2) and Airbus A-320 (2) in their international flight based upon the KTM station which was found on time performance. The data shows that Airbus is better performing than Boeing, 20:1.

It is natural that the airlines worldwide aim to maximize profitability. Facing worsening economic conditions airlines had to plan their operations in way to minimize losses. This can be achieved by improving quality of services particularly maintaining time schedule. However it depends on how to maximize time spent air bone (block-to-block-time) in comparison to the time they spend other ground (turn around phase of flight, technical checks, overnight stays etc.). Efficient scheduling have also a significant influence on aircraft utilization and on time performance. On the day of operation scheduled times may differ from the actual ones due to uncertainty and lack of predictability (route, weather, Notam etc.). This forces airlines to compromise for maintaining their schedules. During the operational day, airlines tend to
maximize block-to-block time and minimizing turnaround time. When fixing schedules very tightly, airlines have to handle the problems of delays due to very tight planning. The cost of delay is very high and varies depending of the length of a delay and whether it occurred on the ground or in the air.

Flight delays or flight cancellation rate determines the overall performance of aviation industry worldwide. On-time-performance is one of the key indicators of air transport service. It's always deals with reliability and punctuality. Punctuality is one of the key performance indicators in the airlines industry and an important service differentiator especially for valuable high-yield customers. (Allen and Hamiltern, 1999). In addition, improved on-time-performance can help achieve significant cost savings. Various research on performance of major Airlines suggests that there is a positive correlation between on-time performance and operating profit. In this similar phenomenon on-time performance leads to highest productivity, quality service, reliability and punctuality as well.

On-time performance depends up on the network planning and control of the management, aircraft availability, ground operations departure, process and arrival process, weather, Notam, (runway close) civil aviation policy and others variables as well. Despite the increasing attention that Nepal Airlines pay to punctuality the industry's on-time performance is still far below satisfactory levels. So that Reliability, punctuality, investment, turnover, utilization, planning, scheduling, operational and other performance targets need to be managed effectively.

III. Earning Capacity/Tariff & Revenue performance of NAC

Aviation plays a significant role in the world today. It supports social and economic development in both emerging and established nations. The strong air travel helps to grow globalization of economics, air travel deregulation and technology and enhanced connectivity between cities (Airbus, 2009). According to Gonenc&Nicoletti (2008) quoted in (piermartini, R.; Rousava L; 2008) that international air passenger transport is an important factor in facilitating trade and development of other sectors of an economy. Trace Keith, FrielinkBarend, Hew Denis (2009) also mentioned that improved air connectivity through air transport links is an essential component of economic growth, as it provides personal access to the region for business, social or recreational purposes as well as physical access to resources and markets.

Performance is behavior evaluated in terms of its contribution to goals of the organization (Dalrymple et al, 2004; Johnston & marshal, 2003). Sales volume and profitability are among the most frequently used marketing performance (Kokkinaki&Amblier 1999; Ambler and kokkinaki 1997; Cark 2000). Financial performance measure of aircraft depend upon the economic viability, including directing cost comparison, ignore both of the non-cash elements and the time value of money. Aircraft investment out of general revenues to support overall economic development rather than the to produce profit. Operation performance focuses on financial performance such as profit ration and sales growth rate. No-financial performance factors, such as customer satisfaction, employee satisfaction and operating efficiency are important with company’s future success. In this Research we can try to find out what the actual traffic and Revenue performance of NAC on the basis of financial performance which is given below on table No. 3
TABLE NO. 3 TARIFF & REVENUE PERFORMANCE OF NAC

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KTM-BKK</td>
<td>4.35</td>
<td>5.08</td>
<td>4.78</td>
<td>4.64</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>BKK-KTM</td>
<td>4.32</td>
<td>4.15</td>
<td>3.25</td>
<td>4.20</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>KTM-DOH</td>
<td>5.03</td>
<td>11.48</td>
<td>16.60</td>
<td>14.01</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DOH-KTM</td>
<td>5.21</td>
<td>10.14</td>
<td>11.38</td>
<td>11.93</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>KTM-DXB</td>
<td>3.34</td>
<td>0.41</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>DXB-KTM</td>
<td>3.21</td>
<td>0.23</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>KTM-HKG</td>
<td>11.68</td>
<td>11.19</td>
<td>10.59</td>
<td>11.19</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>HKG-KTM</td>
<td>12.08</td>
<td>10.78</td>
<td>9.55</td>
<td>11.24</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>KTM-KUL</td>
<td>22.74</td>
<td>22.76</td>
<td>26.63</td>
<td>20.60</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>KUL-KTM</td>
<td>26.77</td>
<td>23.73</td>
<td>17.19</td>
<td>18.00</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>KTM-DEL</td>
<td>0.65</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>2.46</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>DEL-KTM</td>
<td>0.57</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>1.68</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3636525584</td>
<td>4551554201</td>
<td>4629989343</td>
<td>4624968831</td>
</tr>
</tbody>
</table>

Source: Commercial Department of NAC, Management, 2016

In above table No.3, NAC has been conducted/operating six countries within 6 international destinations in 2011. In this duration NAC earned highest revenue from KUL-KTM sector 22.74% and lowest from DEL-KTM Sector 0.57%. In the fiscal year 2011/12 Overall NPR-3636525584 Revenue was collected from international network or flight. Next fiscal year 2012/13, Also highest revenue earned from KUL-KTM sector 23.73% and lowest from DXB-KTM sector 0.23%. In this fiscal year all together (NPR-4551558201) revenue collected from international network. Again, Fiscal year 2013/14 also highest revenue collection through the KTM-KUL which is on 26.63% and lowest from BKK-KTM sector is only 3.25%. Overall NPR-4629989343 revenue collected from international flight network as a same fiscal year. At last fiscal year 2014/15 , Highest revenue collection through the KTM-KUL sector which is 20.60% and lowest from the DEL-KTM which is 1.68%. All together NPR-4624968831 revenue collection from Nepal airline international Network in the fiscal year 2014/15.

According to above data it shows that there is a growth trend of flight revenue but flight is going to be decreasing due to shortage of sufficient Aircrafts. Though Malaysia (KTM-KUL-KTM) sector is very high revenue earned sector of all of above fiscal years. Hong Kong (KTM-HKG-KTM) is the second profitable business revenue collection sector of NAC and Quarter (KTM-DOH-KTM) is the 3rd largest revenue collection sector of NAC and other sectors also satisfactory for revenue collection point of view.

In above analysis shows that NAC get satisfactory in terms of revenue collection from all the international Networks. Higher productivity of airline is the key to faster economic growth of an economy. There is still lacking of proper planning for capacity utilization, Aircraft utilization and expand its wings to other part of the world.
IV. NAC Capacity Utilization

Capacity is defined as the managerial and strategy system required for realization of performance improvement (Jas and Skelcher, 2005). It is curious that does NAC able to utilize full capacity of the available seats in the international sector. The capacity of NAC and number of passengers flow is given in Table 4.

**TABLE NO. 4 PASSENGERS FOLLOW/CAPACITY UTILIZATION**

<table>
<thead>
<tr>
<th>S.N</th>
<th>Sector</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Available Seat</td>
<td>Used seats by PSG. (%)</td>
<td>Seat production</td>
<td>PSG.fown(%)</td>
<td>Seat productio n</td>
</tr>
<tr>
<td>1.</td>
<td>KTM-BKK</td>
<td>19950</td>
<td>54.27</td>
<td>19760</td>
<td>72.57</td>
</tr>
<tr>
<td>2.</td>
<td>BKK-KTM</td>
<td>19950</td>
<td>43.57</td>
<td>19760</td>
<td>45.38</td>
</tr>
<tr>
<td>3.</td>
<td>KTM-DOH</td>
<td>13624</td>
<td>86.52</td>
<td>33725</td>
<td>89.08</td>
</tr>
<tr>
<td>4.</td>
<td>DOH-KTM</td>
<td>14124</td>
<td>91.07</td>
<td>33193</td>
<td>83.11</td>
</tr>
<tr>
<td>5.</td>
<td>KTM-HKG</td>
<td>26132</td>
<td>73.37</td>
<td>26320</td>
<td>78.14</td>
</tr>
<tr>
<td>6.</td>
<td>HKG-KTM</td>
<td>25944</td>
<td>71.97</td>
<td>26299</td>
<td>71.54</td>
</tr>
<tr>
<td>7.</td>
<td>KTM-KUL</td>
<td>52820</td>
<td>80.63</td>
<td>54150</td>
<td>87.93</td>
</tr>
<tr>
<td>8.</td>
<td>KUL-KTM</td>
<td>52440</td>
<td>82.22</td>
<td>53960</td>
<td>78.34</td>
</tr>
<tr>
<td>9.</td>
<td>KTM-DUB</td>
<td>9500</td>
<td>42.07</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>8.</td>
<td>DEL-KTM</td>
<td>9500</td>
<td>37.76</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>9.</td>
<td>KTM-DXB</td>
<td>13490</td>
<td>61.69</td>
<td>1805</td>
<td>65.54</td>
</tr>
<tr>
<td>10.</td>
<td>DXB-KTM</td>
<td>13395</td>
<td>68.72</td>
<td>1710</td>
<td>43.62</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>260869</td>
<td>73.92</td>
<td>270682</td>
<td>78.37</td>
</tr>
</tbody>
</table>

Source: Commercial Department of NAC, Management, 2016

In above table No.4 shows that NAC, has been operating it's flight for 6 international countries within six destination all sector wise passenger was mention on table No.-6. In a fiscal year 2011/12. The total seat production for all sector overall, 260869 and occupancy was 192842 (73.92%). The highest seat production capacity was KTM-KUL (52820) and DOH-KTM was 91.07%. The highest passenger flown in KUL-KTM sector was 43117. During 2012/13 the total seat production capacity of NAC was 270682 and occupancy rate was 212124 (78.36%). In 2012/13 highest seat production capacity of NAC International Network also was KUL-KTM
which was 53960 and occupancy rate of passenger was KTM-KUL sector 87.95%. The lowest seat production sector of this year was KTM-DXB only for 0.35% But after their few time flight was withdraw due to shortage of Aircraft so that KTM-DXB-KTM and KTM-DEL-KTM both sector flight schedule remove from it's international network. Again, Fiscal 2013/14, NAC only operate it’s Flight for only 5 international countries within five destinations. In this year total number of seat production capacity of all of above international network of NAC was 2626875 and occupancy capacity was 198080. Both of capacity of this year decreasing than previous fiscal year due to shortage of Aircraft. In this year highest seat production capacity of KUL-KTM sector 55480 and highest occupancy rate passenger was KTM-KUL sector which is 89.39% and lowest seat production form KTM-BKK was 17860 and occupancy rate of BKK-KTM sector which was only 41.11%. At last fiscal year 2014/15 the total number of seat production capacity of NAC from its international network was 286520 and occupancy rate or passenger follow of 75.69% which was greater than previous all years. The highest seat production capacity of these fiscal years was KUL-KTM 50920 and Highest occupancy rate of KTM-DOH sector was 87.37%. The lowest seat production capacity of this year was KTM-DEL-KTM 16914 and occupancy rate of BKK-KTM sector was (DEL-KTM) 55.01% because of KTM-DEL-KTM flight only re-launching or started from 27 feb2015.

Passenger follow of Airlines is of almost importance for the overall growth of the economy of Airlines. Seat production capacity is an importance productivity of any Airlines. Seat selling capacity or marketing capacity/ strategy only determinants the load factors of Airlines industry. The High level of load factors or occupancy rate determinants to the capacity utilization of Aviation industry. High capacity utilization leads to be high productivity and high productivity lead to be high performance of any organization.

The above phenomenon shows that seat production capacity utilization depend up on the marketing policy or strategy of the organization. So that, NAC also need to focus on online sells, online booked, online check-in, frequent flyer card and priority (facilities), firm issued, pay by credit card, mobile team for capacity sells, code sharing, transit connection management and provide for different skills for regular passenger (like; buy two get one free, etc.) and also need to be improve their regularity, reliability punctuality, aviation safety and security as well.

V. Operational performance of NAC:

Operational performance occupies a significant place in the performance evaluation of airlines. Operational performance determinates to the financial profitability, with regard to the financial performance, shows its "ability to earn profits proves a measure of its market strength it is ability to keep down costs. (Operation)". Profitability also affects the amount of investment, for much industrial investment is financed out of reinvested profits and hence the contribution of the firm to the overall growth of the economy (Killick, 1983, P.183). Capacity utilization depend upon the operational performance so that in this research try to find out the what is the actual operation performance of NAC in their different fiscal years which is given below on table No.-5.
### TABLE NO.5 OPERATIONS PERFORMANCE OF NAC

<table>
<thead>
<tr>
<th>S. N</th>
<th>Station Sector</th>
<th>2011/12 Flt as per schedule</th>
<th>No. of flt.opt. (%)</th>
<th>2012/13 Flt as per schedule</th>
<th>No. of flt.xxD. (%)</th>
<th>2013/14 Flt as per schedule</th>
<th>No. of flt.xxD. (%)</th>
<th>2014/15 Flt as per schedule</th>
<th>No. of flt.xxD. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>KTM-BKK</td>
<td>156</td>
<td>67.30</td>
<td>32.70</td>
<td>134</td>
<td>77.61</td>
<td>22.39</td>
<td>141</td>
<td>66.67</td>
</tr>
<tr>
<td>2.</td>
<td>BKK-KTM</td>
<td>156</td>
<td>67.30</td>
<td>32.70</td>
<td>134</td>
<td>77.61</td>
<td>22.39</td>
<td>141</td>
<td>66.67</td>
</tr>
<tr>
<td>3.</td>
<td>KTM-DEL</td>
<td>241</td>
<td>20.74</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4.</td>
<td>DEL-KTM</td>
<td>241</td>
<td>20.74</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.</td>
<td>KTM-DOH</td>
<td>157</td>
<td>90.45</td>
<td>9.55</td>
<td>192</td>
<td>97.40</td>
<td>2.60</td>
<td>205</td>
<td>87.32</td>
</tr>
<tr>
<td>6.</td>
<td>DOH-KTM</td>
<td>156</td>
<td>90.38</td>
<td>9.62</td>
<td>193</td>
<td>97.93</td>
<td>2.07</td>
<td>204</td>
<td>87.75</td>
</tr>
<tr>
<td>7.</td>
<td>KTM-DXB</td>
<td>157</td>
<td>90.45</td>
<td>9.55</td>
<td>19</td>
<td>100</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8.</td>
<td>DXB-KTM</td>
<td>156</td>
<td>90.38</td>
<td>9.62</td>
<td>18</td>
<td>100</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9.</td>
<td>KTM-HKG</td>
<td>155</td>
<td>89.68</td>
<td>10.32</td>
<td>147</td>
<td>95.24</td>
<td>4.76</td>
<td>153</td>
<td>84.97</td>
</tr>
<tr>
<td>10.</td>
<td>HKG-KTM</td>
<td>155</td>
<td>89.03</td>
<td>10.97</td>
<td>147</td>
<td>95.24</td>
<td>4.76</td>
<td>153</td>
<td>84.97</td>
</tr>
<tr>
<td>11.</td>
<td>KTM-KUL</td>
<td>316</td>
<td>87.97</td>
<td>12.03</td>
<td>303</td>
<td>94.06</td>
<td>5.94</td>
<td>345</td>
<td>84.35</td>
</tr>
<tr>
<td>12.</td>
<td>KUL-KTM</td>
<td>317</td>
<td>87.07</td>
<td>12.93</td>
<td>304</td>
<td>93.42</td>
<td>6.58</td>
<td>345</td>
<td>84.64</td>
</tr>
<tr>
<td>TOTAL FLT.</td>
<td>236</td>
<td>72.24</td>
<td>27.76</td>
<td>159</td>
<td>92.39</td>
<td>7.61</td>
<td>168</td>
<td>82.34</td>
<td></td>
</tr>
</tbody>
</table>

Source: Operations Department of NAC, Management, 2016

The table No.5 shows that Nepal Airlines corporation has purposed 2363 flight to upgrade its overall performance. This could help to maintain schedules in the international network. As mentioned earlier all together 72.24% of flight were operated as a same day and overall 27.76% of flight were cancelled due to different reasons. In 2011/12, all together 1591 No. of flights proposed as per schedules but only 92.39% of flights were operated as a same day of flights schedule but 7.61% flights were cancelled in 2012/13. Again, fiscal year 2013/14, Overall 1687 No. of flights on proposed as per it's schedules but only 82.34% of flight were operated as the same day but 17.66% of flights were cancelled as same duration. Altogether 1799 No. of flights on their schedule but only 86.33% of flights were operated and 13.67% of flight were cancelled in the duration of last fiscal year 2014/15.
When discussing the overall performance of NAC it is still a regular phenomenon that flight cancellation rate is still high due to some sorts of technical reason, having old aircraft, insufficient management and operational ability, lack of skills or trained skillful manpower planning, lack of proper planning & management, various fleets of aircraft utilization, lack of proper resource planning and other natural phenomenon, etc.

VI. NAC performance of Domestic Sector

NAC started its preliminary business from the domestic market. Before coming of different private airlines, NAC was only one entity to deliver air service in Nepal. During late 1980s the number of aircrafts for domestic sector was quite high. After enacting the deregulation Act 1992, the domestic sector by NAC got less attention. At present it has 6 aircrafts which provides air transportation service various destinations of the country. The number of passengers who used RA and the volume of revenue generated from domestic sector which is given in the following Table 6.

### TABLE NO .6 REVENUE & PASSENGER FLOWN PERFORMANCE OF DOMESTIC SECTOR

<table>
<thead>
<tr>
<th>S.N</th>
<th>Region</th>
<th>2011/12</th>
<th>2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total passenger flown</td>
<td>Total revenue (%)</td>
</tr>
<tr>
<td>1.</td>
<td>Central Region</td>
<td>35105</td>
<td>45.80</td>
</tr>
<tr>
<td>2.</td>
<td>Eastern Region</td>
<td>16228</td>
<td>31.91</td>
</tr>
<tr>
<td>3.</td>
<td>Western Region</td>
<td>9807</td>
<td>22.30</td>
</tr>
<tr>
<td></td>
<td>Domestic Total</td>
<td>61140</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>2429377172</td>
</tr>
</tbody>
</table>

Source: Commercial Department of NAC, Management, 2016

The Table 6 shows that altogether 61140 passengers used RA to travel their respective destinations. From the domestic air service total NPR-242397172 was earned in 202011/12. The rate of passengers flew in central region (35105) and revenue collection also highest at same sector (111277189) and lowest passenger flown from the eastern region (9807) and revenue on NPR-54179997 only. Again in 2012/13 altogether 60095 No. of passenger flown and NPR-249265971, revenue collection from it's domestic networks.

In above situation analysis, NAC flight operation situation in domestic network is not much satisfactory and revenue collection was not satisfactory. NAC also have some sorts of social and co-operative responsibility in the society and nation, i.e., being the state owned air service, RA has also employ subsidized rate in remote places like Jumla, Humla, etc.

VII. Operational performance of Domestic Sector

Higher productivity of airline industry is the key to factor of economic growth of an economy. The financial performance of airline depend up on the operating capacity of airlines which is determinants by operational performance so that, operation performance is very important factor for overall productivity of performance of any airlines (see Table 7)
TABLE NO. 7 OPERATIONAL PERFORMANCE OF DOMESTIC SECTOR

<table>
<thead>
<tr>
<th>S.N</th>
<th>Region</th>
<th>Flights as per schedule</th>
<th>No. of Schedules flight operated (%)</th>
<th>No. of flight cancelled (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Central</td>
<td>1384</td>
<td>88.05</td>
<td>11.95</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Western</td>
<td>2016</td>
<td>80.10</td>
<td>19.90</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Eastern</td>
<td>1457</td>
<td>87.98</td>
<td>12.02</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4857</td>
<td>84.72</td>
<td>15.28</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Operations Department of NAC, Management, 2016

Table 7 shows that during 2011/12 scheduled domestic flights were 4857 but NAC managed only 84.72% of flights to operate. It shows 15.28% of flights were cancelled which is quite alarming. Western Region proposed 2016 No. of Flight as per schedule but only 80.10% of flights were operated in the given period. The cancellation rate of domestic flight in the Western region was 19.90% which was highest in the domestic sector as the reference year. All together 1384 No. of flights as per schedule in central region only 88.05% of flights were operated and 19.95% of flights were cancelled on their given duration.

From the above phenomenon, it can be said that NAC domestic flight cancellation rate is quite high which also affect total revenue earning from the domestic sector. This leads to be loss day to day, i.e., there is lack of efficient and effective flight operational performance in domestic sector.

VIII. Capacity Utilization in Domestic sector

Capacity is defined as the managerial strengths which require for realization of performance improvement (Gas &skelcher, 2005 cited by Jentabeadi, 2013 P.1). Organization capacity and capability utilization in Airline determine the overall productivity and performance of airline. Organization capacity covers the study of the capacity within the organization level (child & Falkner, 1998; Finder & Brand, 1999). Table 8 discusses to find out the actual capacity utilization situation of domestic sectors Nepal airlines in Nepal.

TABLE NO. 8 CAPACITY UTILIZATION IN DOMESTIC SECTOR

<table>
<thead>
<tr>
<th>S.N</th>
<th>Region</th>
<th>Total seat production</th>
<th>Passenger flown / capacity utilization</th>
<th>In %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Central</td>
<td>20203</td>
<td>17103</td>
<td>84.65</td>
</tr>
<tr>
<td>2.</td>
<td>Western</td>
<td>22129</td>
<td>19987</td>
<td>90.32</td>
</tr>
<tr>
<td>3.</td>
<td>Eastern</td>
<td>25375</td>
<td>24147</td>
<td>95.16</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>67707</td>
<td>61237</td>
<td>90.44</td>
</tr>
</tbody>
</table>

Source: Commercial Department of NAC, Management, 2016

The above Table 10 shows that average 90.44 percent of the domestic sector available seats were utilized in the reference period. When analyzing region-wise it was found the highest utilization rates was in the Eastern region sector compared to other Western and Central Development regions. From this situation it can be said that the percentage of capacity utilization was good but still unable to run in full condition need to planning for maximum capacity utilization in Nepal.
IX. Status of profit and loss situation of NAC

Different indicators over the last 10 years, i.e., from 2007 to 2017 shows performance of NAC is in the negative trend especially in case of cumulative loss (See Table 9).

**TABLE 9: CUMULATIVE P/L OF NAC**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Net profit/loss (in lakh)</td>
<td>117</td>
<td>3421</td>
<td>(1970.59)</td>
<td>300.16</td>
<td>1262</td>
<td>203.11</td>
<td>200</td>
<td>3105.26</td>
<td>624</td>
<td>2140</td>
<td>433</td>
</tr>
<tr>
<td>2</td>
<td>Cumulative loss/profit</td>
<td>(2320 8)</td>
<td>(1566 3)</td>
<td>(17634.51)</td>
<td>(16661.92)</td>
<td>(1557 5)</td>
<td>(19212.18)</td>
<td>(1561 4)</td>
<td>(11044.56)</td>
<td>(17.45 45)</td>
<td>(1885 8)</td>
<td>(1820 9)</td>
</tr>
<tr>
<td>4</td>
<td>Employees</td>
<td>1417</td>
<td>1472</td>
<td>1412</td>
<td>1369</td>
<td>1426</td>
<td>1411</td>
<td>1411</td>
<td>1273</td>
<td>1239</td>
<td>1328</td>
<td>1265</td>
</tr>
<tr>
<td>5</td>
<td>Gross operating income</td>
<td>4161 5</td>
<td>NA</td>
<td>33128.34</td>
<td>NA</td>
<td>NA</td>
<td>52992</td>
<td>5944 8</td>
<td>NA</td>
<td>68368.48</td>
<td>7888 8</td>
<td>NA</td>
</tr>
<tr>
<td>6</td>
<td>Total expenditure</td>
<td>4432 9</td>
<td>NA</td>
<td>35098.93</td>
<td>NA</td>
<td>NA</td>
<td>51717</td>
<td>5844 0</td>
<td>NA</td>
<td>64789.17</td>
<td>7603 6</td>
<td>NA</td>
</tr>
<tr>
<td>7</td>
<td>Operating profit</td>
<td>(2714 )</td>
<td>NA</td>
<td>(1970.59)</td>
<td>NA</td>
<td>NA</td>
<td>1275</td>
<td>1008</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Other income</td>
<td>2831</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>267</td>
<td>802.0 0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>9</td>
<td>Loan from GON.</td>
<td>678</td>
<td>764</td>
<td>679.00</td>
<td>764</td>
<td>NA</td>
<td>3693</td>
<td>3493</td>
<td>35486</td>
<td>5193</td>
<td>5693</td>
<td>5893</td>
</tr>
<tr>
<td>10</td>
<td>From Banks and financial institution</td>
<td>7628</td>
<td>7310</td>
<td>10692.54</td>
<td>9299.8</td>
<td>NA</td>
<td>12153</td>
<td>1196 1</td>
<td>103319</td>
<td>10491</td>
<td>1079 9</td>
<td>1143 96</td>
</tr>
<tr>
<td>11</td>
<td>Net profit ratio</td>
<td>NA</td>
<td>NA</td>
<td>(6.01)</td>
<td>NA</td>
<td>0.57</td>
<td>0.35</td>
<td>0.34</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>12</td>
<td>Seat factor</td>
<td>NA</td>
<td>72.42</td>
<td>70.0</td>
<td>84.3</td>
<td>NA</td>
<td>80.35</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Load factor</td>
<td>NA</td>
<td>73.32</td>
<td>72.0</td>
<td>69.2</td>
<td>NA</td>
<td>79.0</td>
<td>73.92</td>
<td>78.37</td>
<td>75.69</td>
<td>76.44</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: GoN/MoF, Annual Performance status of Public Enterprises, Kathmandu
Over the analyzed period net profit shows positive trend except in 2009, however, the cumulative loss accounted to 1820.9 million in 2017 which was 2320.8 million in 2007. This shows there is slightly improving, but still could not manage to make profit. One of the main reasons to have such huge loss was due to the inappropriate decision for leasing Chase Air which added unnecessary liabilities to NAC. So NAC still could not buy additional aircraft on the contrary, growth of nonproductive expenses such as salaries other administrative expenses could not control. However, NAC started to curtail around 7 percent employees from 2014. NAC has also taking loans both from GoN and other banking institutions to maintain its annual capital and regular expenditures. In case of not taking enough attention to control the unproductive expenses, the loan financing would be suicidal to NAC’s future. From this discussion it can be argued that NAC’s financial performance is shaky and need to improve.

5. Causes of Poor Performance

The government adopted privatization of airlines industry mainly to bring private sector to expand more air services in the country. NAC was also not able to fulfill the demands of air services to both international and domestic due to the lack of sufficient number of aircrafts. It can also be said government has given little or no attention to expand NAC’s capacity enhancement. In addition weak management and politicization for recruitment of executives and among the employee for managing RA also affected to enhance the capacity which directly or indirectly affect the performance of NAC. How to development its capacity for improving performance of NAC has become challenging in Nepal. Of course there is enough opportunity to capture the demands of air services as RA occupies only 10 percent of total air service demands in Nepal.

6. Challenges of NAC

NAC (existing Royal Nepal Airlines) was established long ago like other airlines in Thai airways, Singapore airlines, etc. and gaining good experiences among the technical and other employees. The expansion of airlines market has also been steadily growing; having full ownership of the government could be very helpful to have higher success of NAC. But due to a number challenges NAC could not achieve satisfactory results. Some of the key challenges are NAC has to compete with other mega carriers particularly the foreign airlines, having limited aircrafts, absence of smart management of NAC, having diverse nature of aircraft added for efficient fleet operation, unnecessary intervention from the politics, and increasing financial loss over the period.

7. CONCLUSION

Performance of Nepal Airlines Corporation in this article is discussed on the basis of resource utilization capacity, on time performance capacity, seat production capacity and passengers flown rate, Financial performance, revenue collection tendency, flight delays, postpone and cancellation tendency including safety, security, reliability and punctuality rate. In addition it also take into account the social recognition and image/goodwill of the carrier as the important factors which depend upon airlines performance.

With regard to aircraft utilization it was found annual flights were taken place maximum 251 days to minimum 179 days and in terms of hours/per day it was maximum 14.41 hours to only 7.37 HRS per day during the reference years. Such tendency indicates low level capacity
utilization of NAC. Analyzing on time flight performance it was found to be 70.58% on time, 29.42% delays and 1.88% of flight were cancelled. This indicator shows that still NAC has not been managing on time flight performance. Such tendency is reliability and punctuality is not very much encouraging.

The data shows the traffic & revenue performance of NAC has been increasing despite the decreasing trend of flight schedule.

The data of NAC for the last four years shows that there is uneven growth of passenger flown rate and occupancy rate which gives unsustainable growth of NAC. With regard to operational performance, i.e., financial profitability of NAC has been improving. The ground handling service has significantly contributing to improve financial profitability of NAC, which however, operational performance of RA flights is still not satisfactory.

Despite NAC has bright future as it is only the national carrier which is taken as nation’s pride, and also the demands of air services both in domestic and international markets has been increasing the performance of NAC is not that expected level. There is also a tendency of promoting the national carriers such as Belgium air, Swiss Air, Qatar airways, Thai Airlines, Air India, etc. NAC has not getting enough attention by the government in Nepal. By promoting the national flag carriers, the chances of promoting tourism, developing and balancing foreign trade, providing more air services to the people, etc. would be achieved. For this, improvement of performance of NAC is the primary requirement.

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FLOWERING PHENOLOGY OF SOME CULTIVATED AND WILD GROWING NECTARIFEROUS PLANTS IN THE SOUTHERN REGION OF UZBEKISTAN

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**Researcher,
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ABSTRACT

The article considers the nectariferous and polliniferous plants of the cultivated and wild flora of the Surkhandarya region of Uzbekistan. The phenology of flowering of cultivated and wild nectariferous plants of this region has been studied. Phenological spectrum of all phases of the phenological development of these plants has been also compiled. The zone of the upper Adyr is occupied by the plant groupings of the dry mixed grass steppe. Here grow very diverse in species composition of honey plants. Summer cultivated honey plants are Citrullus vulgaris, Melo orientalis, Impatiens balsamina, Ocimum basilicum, Portulaca grandiflora, Medicago sativa, Helianthus annuus, Gossypium hirsutum, Gossypium barbadense. In this period of time, honey plants and the nectar yield in the hive are the most abundant in bloom.

KEYWORDS: Flowering Phenology, Phenological Spectrum, Phenophase, Mass Flowering, Honey-Pollen Flora, Cultivated And Wild Honey Plants, Vegetation, Fruiting, Seed Ripening, Entomophilous Crops, Honey-Bearing Vegetation.
INTRODUCTION

To date, a great deal has been accumulated about honey plants, but the intensive development of beekeeping in the past decade has set large and concrete tasks for researchers. The efforts of various researchers have revealed a large number of honey plants [1; 2; 3; 4; 5]. However, the honey resources and the phenology of flowering in the Surkhandarya region are not enough, since there are no literature sources providing data on the distribution of honey bearing plants in the plant communities of the region.

In beekeeping, the main tasks are the study of the phenology of flowering of honey plants and the compilation of phenological spectra, that is, the specification of the timing of the onset of all phases of the phenological development of honey plants: vegetation, flowering, fruiting, seed ripening (fruits), the end of vegetation.

For the conditions of the Surkhandarya region, the phenological spectrum of the honey-bearing vegetation was not compiled, although the need for such work was long overdue, so one of our main tasks was to study the cultivated and wild-bearing honey-pollen flora. The beekeeping season in the region begins with the flowering period of entomophilous crops. The beginning of the growing season of cultivated honey plants depends on the conditions of the year and usually falls on the end of February - the first decade of March. In annual crops at the beginning of the growing season affects the sowing period.

Almonds are blooming first in the region (end of February and beginning of March), then apricot, apple, willow and elm come into this phenophase. At the beginning of April, plum, cherry, pear, cherry plum blossom, peach and quince a bit later; from ornamental plantings-Populus alba, Ailanthus altissima, Gleditschia triacanthos, Robinia pseudacacia. Mass flowering of these crops lasts about 10-15 days. In late April, Juglans regia, Koelreuteria paniculata, Laurus nobilis, Citrus limon, Morus alba, M. nigra bloom; May-vegetable-melons and some tree species: Ligustrum vulgare, Punica granatum, Sophora japonica, Zizyphus jujube, Elaeagnus orientalis, Catalpa bignonioides. Summer cultivated honey plants are Citrullus vulgaris, Melo orientalis, Impatiens balsamina, Ocimum basilicum, Portulaca grandiflora, Medicago sativa, Helianthus annuus, Gossypium hirsutum, Gossypium barbadense. Depending on the conditions of the year, the flowering of such entomophilic crops as cotton and vegetable melons may be delayed until August - September.

Wild-growing honey plants of the chul and lower adyr zone. The vegetation cover is dominated mainly by ephemeral vegetation, among which there are many nectariferous and pollen plants. The life cycle of plants of this belt is short. Plant cover edifiers end their life cycle by the period of summer drought. (Fig. 1).
Figure 1.
Phenological spectrum of the main wild-growing honey-perganous plants in the Tau zone of the Surkhandarya region

<table>
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<th>plant names</th>
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<td>Lycium ruthenicum Murr</td>
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<td>Eremurus olgue Agl</td>
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<td>Dreponocoryum severtovii (Agl)</td>
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<td>M. Lupino L</td>
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<td>Cerosus erythrecorepa Nesni</td>
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<td>C. mobaleb (L) Mill</td>
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<td>Malus sieversi (Lee) M.Aeem</td>
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<td>Rosa conina L</td>
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<td>Rubus coeusius L</td>
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However, some perennials continue to vegetize until the end of the summer season. As can be seen from the phenological spectrum shown in (Fig. 1), the species of the genus Gagea, Crocus korolkovii, Eranthis longistipitata, Capsella bursa pastoris are the first to bloom here (in the second decade of March).

Mass flowering of these species lasts 15-20 days. At the beginning of April, the species of the genus Ixiolirion tataricum, Peganum harmala, Zygophyllum oxianum, Cardaria repens, Strigozella africana, Strigozella turkestanica, Berberis vulgaris, Gentiana olivieri enter the flowering phase. At the end of April and in May, Trigonella grandiflora, Onobrychis micrantha, Onobrychis pulchella, Eremurus sogdianus, Taraxacum officinale from Roemeria refracta, Papaver pavoninum, Rumex conglomeratus, Plantago lanceolata bloom. In mid-May, flowers appear on Psoralea drupacea, Glycyrrhiza glabra, Allium bazarzcewskii, Delphinium barbatum, Capparis spinosa, the flowering of these species goes on and June: Lagongehium farctum, Alhagi pseudalhagi, Alhagi canescece, Alhagi churus, alhagi pyeudalhagi, Alhagi pesudalhagi, Alhagi pesudarahosa, Alhagi pesudara, Alhagi pesuda, Alhagi pesuda, Alhagi pesudalhagi This zone is characterized by pollen from species of the genus Gagea, Taraxacum, Ixiolirion, Eranthus, Ranunculus, Plantago.
The zone of the upper Adyr is occupied by the plant groupings of the dry mixed grass steppe. Here grow very diverse in species composition of honey plants. As can be seen from the phenological spectrum, honey plants begin to grow in March, and in early April, Trigonella grandiflora, Eremostachis lehmanniana, Astragalus filicaulis, Thermopsis delichocarpa, Strigosella sryptinioides, and Strigosella grandiflora are already in bloom. Then bloom species of Eremurus, Medicago, Onobrychis, Onosma, Plantago, Glaucium, in May - June bloom Anchusa italicca, Echium italicum, Melilotus officinalis, Leonorus turkestanicus, Althaea nudiflora, Inula grandis, species Rosa, Achillea, Hypericum, Artemisia. They provide commercial honey.

Ripening of seeds Glycyrrhiza glabra, Perovskia scrophulariifolia, Cousinia umbrosa occurs in July-August, and in Melilotus officinalis, Anchusa italicca, Althaea nudiflora, Echium italicus, Onobrychis pulchella, Onobrychis micrantha in August. In Acroptilon repens, Cichorium intybus and other species, the seeds ripen in September.

In the upper zone of the adyr, such nectarose species as Cousinia umbrosa, Glycyrrhiza glabra, Acroptilon repens, Nepeta olgae, which bloom in late May and continue until mid-July, are widely distributed, and seeds last until September-October.

As it turned out in the process of phenological research, many honey plants finish flowering at the end of July. In August, this zone begins without a bribe period, which can be eliminated by moving the apiaries to the wild mountain honey bearing plants or to seeding entomophilous crops, in particular, to cotton.

The tau zone is rich in honey plants. Plant phytocenoses of the type of mountain deciduous forests and shrubs, juniper forests and upland xerophytes prevail here. In the second decade of March, species of the genus Gagea, Tussilago farfara, Leontice eversmannii, Amygdalus bucharica bloom. The main part of the plant, most characteristic of the tau zone, enters the flowering phase from mid-April: Berberis oblonga, Onobrychis schugnanica, Onobrychis micrantha, Solanathus coronatus, Solanathus turkestanicus, Salix species. The flowering of trees and shrubs of common species lasts 15-20 days: Pyrus turkomanica, Lonicera nummulariifolia, Crataegus turkestanica, Crataegus pontica, Acer pubescens, Cerasus erythrocarpa, Cerasus mahaleb, Malus sieversii.

From the grass of nature Agrimonia asiatica. Flowering Rubus caesius, Origanum tythanthum, Trifolium pratense continues until the end of August.

**FINDINGS**

Summarizing the results of phenological observations of cultivated and wild-growing honey plants in all zones of the Surkhandarya region, we identified the most productive period: from May to June. In this period of time, honey plants and the nectar yield in the hive are the most abundant in bloom.

Further, I would like to emphasize that since the flowering of honey plants in the Surkhandarya region begins in the second half of March, lasts all summer and ends in October, a kind of flowery and nectar conveyor is created, the last circumstance is another indisputable confirmation of the existence of real opportunities for the further development of beekeeping in the studied region.


IMMATCHENESS IS THE KEY TO THE DEVELOPMENT OF RETINOPATHY OF THE DISABILITIES

Tashkhanova Dilrabo Iskandarovna*

* Research, RSNPTs TSMG-Republican Specialized Scientific-Practical, Medical Center of Eye Microsurgery, 50 "RSNPMTS Eye Microsurgery"; RSNPMTS Pediatrics MZ RU, UZBEKISTAN

ABSTRACT

Purpose of the study. Analyze the incidence of retinopathy of prematurity depending on the birth weight and gestational age of newborns. Material and research methods. 71 premature babies with birth weight from 1000 to 2500 g and gestational periods of up to 35 weeks were in the department for ND RSNPMTS Pediatrics. Ophthalmologic examination was carried out using indirect binocular ophthalmoscopy under conditions of maximum medical mydriasis under the supervision of a neonatologist or an experienced nurse. The study was based on the results of an eye examination. In recent years, the development of the perinatal care system, the use of glucocorticosteroids and surfactant in neonatology, the improvement of nursing technologies for very preterm infants have led to a significant increase in the number of surviving premature babies. An effective way to influence the occurrence of PH is the prevention of premature birth and optimization of prenatal and postnatal nursing. High morbidity and disability among the children's population indicates that the problem of child health has outgrown the medical and social level.

KEYWORDS: Prematurity Depending On The Birth Weight, Retinopathy, Blind, Medical Examination
INTRODUCTION

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Results. The pH was detected in 36.6% (26 of 71) ND. Revealed a clear dependence of the frequency of PH on body weight at birth and on the timing of gestation. An effective way to influence the occurrence of PH is the prevention of premature birth and optimization of prenatal and postnatal nursing.

High morbidity and disability among the children's population indicates that the problem of child health has outgrown the medical and social level. According to WHO, there are about 1.5 million blind children in the world (8). Blindness is not only a tremendous expense for the State, but it also disrupts the child’s motor, verbal, receptive and social development (2). According to WHO experts, in 40% of cases, child blindness can be eliminated (8).

In recent years, the development of the perinatal care system, the use of glucocorticosteroids and surfactant in neonatology, the improvement of nursing technologies for very preterm infants have led to a significant increase in the number of surviving premature babies. However, this also identified completely new problems in pediatrics. Due to the high frequency of disabilities from childhood in premature babies, the problem of their nursing becomes one of the most fundamental in health care (3,4). At the same time, the frequency of disability in premature newborns is 22 times higher than that of children born on time. First of all, these diseases include retinopathy of prematurity (RN) - a disease of the retina of very premature babies who have a retinal vascular network at the time of birth (6).

According to the existing unified International Classification of PH, the most unfavorable prognosis regarding the severity and flow rate of active PH is observed in cases of development of posterior aggressive PH (13), which, in the absence of timely detection and adequate treatment, leads to irreversible loss of visual functions (5,10,11, 12).

The frequency and severity of retinopathy vary widely in relation to different countries, regions, cities, and depends not only on the number of surviving very premature babies, but also on the conditions of their nursing and somatic burden. In particular, in the risk group, the disease develops in 25–37.4% of cases. In this case, severe forms with significant visual impairment occur in 17-50% of cases. The frequency of retinopathy and its severe forms is higher in developed countries (USA, Japan, European Union), where, thanks to improved nursing conditions, a large number of very premature and previously unviable babies survive. In these countries, retinopathy occupies a leading place among the causes of blindness in children, and its frequency reaches 75% (1). There is an opinion that PH affects children more often than it is recorded (7).

Currently, more than 30 risk factors for this serious illness have been identified. The main ones are low gestation and low birth weight (9).
The goal is to analyze the frequency of development of PH depending on the body weight and gestational age of the newborn.

MATERIALS AND METHODS

The study was based on the results of an ophthalmologic examination of 71 premature babies (ND) weighing from 1000 to 2500 g and gestational periods of up to 35 weeks that were in the department for ND of the Republican Specialized Scientific-Practical and Medic al Center of Pediatrics.

Ophthalmologic examination was performed using indirect binocular ophthalmoscopy under conditions of maximal medical mydriasis (instillation of 0.5% midax solution 1 hour before the examination 2 times with an interval of 15 min) using wide-focus lenses (+) 20 Dptr and (+) 30 Dptr, soft spring specimens. The timing of the examination was determined taking into account the somatic condition of the child and taking into account the possibility of ocular and ocular reflexes (tachycardia, bradycardia, increased breathing, apnea, etc.) at 4-8 weeks of life, which corresponded to 32-34 weeks post conceptual age (PCV), ophthalmic The examination was carried out very carefully and under the supervision of a neonatologist or an experienced nurse. All children had severe somatic pathology, the 3rd premature newborn was given primary resuscitation with the provision of thermal protection dosed with oxygen (ALV). In the presence of spontaneous breathing at birth, non-invasive respiratory support was provided, providing constant positive airway pressure (CPAP - continuous positive airway pressure) using nasal cannulas in 11 children for more than 3 days, in 3 children for more than 20 days.

RESULTS AND DISCUSSION

The PH was detected in 36.6% (26 of 71) ND at risk. The time of onset of the disease ranged from 4 to 10 weeks after birth or 31-42 weeks of gestation.

Revealed a clear dependence of the frequency of PH on body weight at birth. In 15 children weighing 1001–1300 g, the PH was detected in 9 (60%) cases. With increasing mass, the incidence of the disease gradually decreased. PH was also detected in 7 (46.6%) of 15 children weighing 1301-1500 g, in 6 (35.2%) ND out of 17 with a body weight of 1501-1700 g, in 4 (30.7%) ND of 13 with a body weight of 1701-2000 g. In children with a birth weight of more than 2000 g (11), the PH developed only in 1 (9%) case, despite the severe physical condition and prolonged oxygen therapy.

There is a dependence of the frequency of PH and gestational age. Of the 9 children born before 30 weeks of gestation, the PH was detected in 4 (44.4%), out of 33 ND, 31-33 weeks of gestation were found in 13 (39.3%) and 29 ND born in terms of 34-35 weeks PH was detected in 9 (31%) cases.

Analysis of the results showed that the frequency of PH in the investigated age range was 36.6% and had a clear dependence on body weight at birth and on the terms of gestation. The first signs of PH were noted in the early terms of PKV (32-34 weeks).
To identify retinopathy, it is necessary to organize primary preventive examinations of all premature babies - no later than 3-4 weeks of life, prevention of premature birth and optimization of prenatal and postnatal nursing, i.e. reasonable organization of joint work of the neonatologist and the ophthalmologist.

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URBANIZED TRENDS IN UZBEKISTAN AT THE END OF THE XX - EARLY XXI CENTURIES

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ABSTRACT

The article analyzes the main trends in the development of urbanization in Uzbekistan in the Soviet and post-Soviet periods on the basis of various, primarily, analytical and statistical sources. An important place in the work is occupied by the analysis of urbanism through the prism of industrialization in the republic. The characteristic problems and contradictions of the development of cities of Uzbekistan, especially in the era of independence, are considered. At the same time, the location of cities and industrial facilities in the republic was largely aimed at serving the needs of the single national economic complex. The one-sided development of industrialization has affected twice the share of the extractive sector in the total industrial output than the manufacturing industry, which was significantly lower than the average union indicators. During the transition period, the differentiation of the regions in terms of socio-economic development deepened in the country, the gap in the level and quality of life of the rural and urban population widened, the problems of small and medium-sized cities were revealed. Thus, urbanization and the formation of agglomerations surrounded by megalopolises affect the territorial distribution of industrial enterprises and transport infrastructure facilities.

INTRODUCTION

Soviet heritage

The history of the emergence of cities in Central Asia, in particular, in Uzbekistan goes back thousands of years. During the development of the Great Silk Road, Tashkent, Samarkand, Bukhara, Khiva, Termez, like other cities of Central Asia, became centers of intercontinental trade, mutual influence and mutual penetration of world civilizations. At the present stage, the historical conditions, economic, cultural and social environment have changed, which affected the structure and significance of the country's cities (Altbach & Levy, 2005; Rahmatullaev, Ganieva, & Khabibullaev, 2017).

The Soviet period in the history of Uzbekistan was accompanied by a significant increase in the general and, above all, urban population, the emergence of new cities and the expansion of engineering, communal and social infrastructure in cities, as well as the growth of agricultural and mining industries in the country's economy. On the other hand, in the structure of newly created cities, a certain part consisted of single-industry towns (cities with one city-forming enterprise, mainly resource ones), focused on specific narrow goals and objectives, more related to the cities and industries of other republics of the former USSR, rather than focused on the local economy (Bobur & Alimova, 2017). The policy of statism, i.e. direct state intervention in the economy in order to accelerate its growth rates laid serious imbalances in the spatial development of the republic, limiting the ability of cities to adapt to the conditions that arose after the collapse of the single national economic complex.

The processes of urbanization in Uzbekistan were stimulated by industrialization and mass migration of people from other regions of the USSR, both in the war and post-war years. So, from 1913 to 1985, the volume of industrial production of the republic grew 100 times.

This policy of the USSR in Uzbekistan has led to significant economic and demographic changes, in particular, to the rapid growth of new cities and the number of urban population. So if the population of Uzbekistan increased 4.3 times from 1926 to 1989 - from 4.6 to 19.9 million people, the share of the country's urban population almost doubled (from 22% to 41%). At the same time, in absolute terms, the population of the cities of the republic over these years has grown even more (8 times - from 1 to 8.2 million people). In the pre-war period (1924-1941), the average annual population growth rate was 2.5%, in 1959-1970. - reached 4.1%, and in 1970-1990. dropped to 3.15%. The main share of the increase was in the rural population, which by 1990 had increased 2.2 times as compared to 1959.

However, in the second half of the 1970s, external migration became negative due to the outflow of non-indigenous (mostly Russian-speaking) population from the republic, not only from urban but also from rural areas.

At the same time, the location of cities and industrial facilities in the republic was largely aimed at serving the needs of the single national economic complex. The main emphasis was placed on the formation of urbanized zones with developed extractive industries and infrastructure in underdeveloped and hard-to-reach areas with natural resources (Morrison, 2009; Sahadeo & Zanca, 2007).

The evacuation to Uzbekistan of industrial enterprises from other Union republics had a significant impact on the processes of urbanization and industrialization during the Second
World War, as well as in other countries of Central Asia. In the years 1941-1943, more than 100 enterprises were relocated to Uzbekistan. As a result, with the growth of industrial production, the proportion of the urban population in the republic increased.

From the second half of the 20th century, in parallel with the growth of ordinary cities, rapid growth of resource cities was observed. This was facilitated by the emergence and development of the Navoi territorial complex of the mining and metallurgical industry, the Almalyk-Angren TPK, and the Fergana petrochemical complex. The one-sided development of industrialization has affected twice the share of the extractive sector in the total industrial output than the manufacturing industry, which was significantly lower than the average union indicators.

In addition, Uzbekistan inherited a scheme of territorial development and distribution of productive forces, which was focused mainly on meeting the demands of the agro-industrial economy. The main principle of the territorial development of the former USSR was the creation of a single national economic complex.

As part of this policy, the placement of industrial facilities in Uzbekistan was carried out primarily in the interests of ensuring the export from the country of hydrocarbon and mineral resources, cotton fiber, and other types of raw materials. According to some information, only from 1976 to 1990. Cotton fiber and gold for more than 35 billion dollars were exported from Uzbekistan.

The range of industrial products of the country, with the exception of a number of industrial goods (airplanes, excavators, and a number of others), was limited to positions representing building materials, cotton fiber, and light industry goods. In the years 1980-1990. The share of enterprises of the light, cotton-cleaning, textile and food industries in the total industrial production of Uzbekistan was over 50%.

According to L.N. Ziyadullaeva, “the needs of the economy of Uzbekistan, focused on the production of several types of mineral raw materials and cotton, in industrial equipment, technologies, many types of raw materials and materials, food products - grain, sugar, oil, consumer goods, including those that could to be produced locally, satisfied by import from outside the republic. In 1989, the share of imported products (including imports) in the volume of consumption of the republic as a whole was 23.6%, and for many goods was significantly higher. About 84% of exports from Uzbekistan and 85.1% of its imports accounted for other former Soviet republics, in trade with which (except for Estonia, Tajikistan and Moldova), Uzbekistan had a chronic deficit. Uzbekistan also had a negative balance in trade with countries outside the USSR. Nearly 9/10 of its exports to these countries accounted for cheap raw materials and products of their primary processing (including more than 80% for cotton fiber), and in import the main place was occupied by relatively more expensive products of the processing industries, primarily machine building. In addition, the main income from the export of Uzbek goods went to the union budget. ”

The low share of industrial production in the demographically growing Andijan, Namangan, Fergana, Tashkent, Samarkand, Kashkadarya, Khorezm, Bukhara regions and the extremely small number of industry objects in the Syrdarya, Djizak, Surkhandarya regions and Karakalpakstan laid the basic prerequisites for long-term disparities.
In general, it should be noted that urbanization in Uzbekistan, as in other republics of Central Asia, was subordinated to the interests of the All-Union Economy (MIC, AIC) in the Soviet period, which led to the emergence of monotowns, the predominance of extractive industries in countries of the region. During the transition period, most countries in the region faced the consequences of a hypertrophied economy, the differentiation of regions in terms of socio-economic development deepened (especially along the rural-urban line), and the problems of small and medium-sized cities were exposed.

The situation prevailing for Uzbekistan on the eve of independence is characterized by uneven urbanization across regions, a significant share of the agrarian sector in the national economy, and the fact that half of the population lived in rural areas.

**Actual problems of urbanization transition**

After gaining independence in Uzbekistan on the basis of world experience and its own potential, historical features of development, its own model of political and economic reforms was developed and implemented, which had a significant impact on the development of urbanization processes. The dynamics of the transformation process has brought new challenges to urbanization. Firstly, due to the transit period, a significant part of urban settlements in the republic faced a downturn in economic activity and, accordingly, a decline in local budget revenues. The potential of urban management in a market economy was also limited. Secondly, the approaches to the development of cities in the post-Soviet era were based on their ability to build a system of urban management and support the social and economic development of urban areas. There are both successes and failures that deserve careful study from the point of view of historical science.

At the same time, the following challenges are relevant at the beginning of the 21st century. The relatively high natural growth of the population in rural areas with limited opportunities for employment in the countryside leads to an aggravation of the unemployment problem;

Limited water and land resources, which raise the question of increasing labor productivity in agriculture, primarily through the mechanization and introduction of new technologies, in the interests of food security;

The growing burden on urban infrastructure, which was created during the Soviet era and today has largely exhausted its vital resource. It needs significant investment and radical modernization;

The vastness of the territory, which limits the access of cities to infrastructure networks, leads to high transport and communication costs.

Ultimately, the republic today is faced with a set of questions about the prospects of its territorial organization, building new spatial frameworks that meet the interests of socio-economic development in the long term.

**Demographic Trends in Transition**

After the collapse of the USSR in 1991, the republic chose its own model of economic, territorial and urban development, depending on the demographic situation, the settlement pattern, climatic and socio-economic conditions. This in turn influenced the scale and nature of urbanization processes.
During the transition period, the population of Uzbekistan continued to grow at a steady pace (on average by 1.5% per year). The number of the resident population of the Republic of Uzbekistan as of January 1, 2017 amounted to 32.1 million people and grew in comparison with 1991, by 11.5 million or 55.9 percent. At the same time, in the years of independence, a tendency has been observed in the country to reduce the proportion of the urban population. So, if in 1991, 40% of the population of the country lived in the cities of Uzbekistan, in 2001 - 37%, and in 2006 - 36%. This was caused by the rapid growth rate of the rural population (birth rate), administrative restrictions (propiska system), as well as the migration outflow of part of the urban population, especially in the early years of independence (Anonymous, 2010; Malatesta et al., 2012).

In 2009, by the decision of the government, 965 large rural settlements were given the status of urban settlements, as a result of which the urban population of Uzbekistan grew by 4.4 million people. Thus, as of January 1, 2017, the urban population of the country made up 50.6% of the total number.

It should be noted that the growth in the number of small cities and their population will require investment to create jobs, provide affordable housing, social services (education, medical and social services), and strengthen the industrial and infrastructure potential of cities. According to experts, currently, out of 1065 urban settlements of Uzbekistan, only 114 have a relatively developed engineering, utilities and transport infrastructure, and are located close to large enterprises and transport interchanges. The remaining 951 - do not yet have sufficient industrial and infrastructure potential. To start the process of their development requires additional impetus.

The urgency of the issues of urbanization for Uzbekistan is due to the fact that the country is the most densely populated in the region. As of January 1, 2017, the average population density was 71.5 people per 1 km², having almost doubled in the last 30 years (in 1989, it was 44.5 people per 1 km²). However, the population settled in the territory of the republic is extremely uneven due to the diversity of climatic and landscape conditions, the layout of industrial enterprises, transport and communication infrastructure and other factors. The greatest population density is observed in developed oases and foothill areas, very poorly populated - desert and semi-desert areas (from 1 to 9 people per 1 km²).

**Industrial Policy and Spatial Development**

The period of transformation after 1991 developed and adopted its own model of political and economic reforms, which influenced the dynamics, forms and results of the industrialization and urbanization processes in the country.

During the transition period, the industrialization policy was focused on the development of the extractive industries, the oil and gas industry, non-ferrous metallurgy, energy, and the creation of light, textile, food and processing enterprises in the regions. The successful implementation of large industrial projects became the basis for the further development of the industrialization policy in the country and in conjunction with measures to support small business, reforming agriculture and financial and banking institutions helped to ensure high growth rates.

As a result, by 1996, Uzbekistan had achieved economic growth of 1.7%, and in 2001 the republic reached the pre-reform level of GDP. In general, in the first 20 years, the economy of Uzbekistan grew by 3.5 times, and per capita - by 2.5 times (Herdeg, 1990; Onder, 2002).
Significant changes have occurred in the production structure of the economy. The share of industry in GDP decreased from 26.3% in 1991 to 14.2% in 2000, and the volume of industrial production in 1995 by 1990 decreased by 0.2%, which was due to a sharp decline in industrial production during the period of economic growth, recession 1992-1995. The measures taken at the beginning of the new century on the industrialization and modernization of the economy ensured the growth of total production volumes and the share of industry in GDP. Since 2000, it has been growing at 1.2 p. (compared to 1990), in 2005 - 1.8 p., in 2010 - 3.0 p. and in 2016 - 4.6 p.

The territorial development policy was aimed at eliminating disproportions between regions, creating new import-substituting and export-oriented industries and industries. As a result, new “growth points” were formed - automobile plants in the cities of Asaka and Samarkand, a gas chemical complex in Shurtan, a refinery in Bukhara, and others.

The main sources of economic growth of the republic are large cities, while small and medium-sized cities are poorly involved in the economic and social development of the countries of the region, which leads to distortions of spatial development.

**Uzbekistan has one huge metropolis, which prevails over all other settlements.**

In addition, in Uzbekistan 3 major cities other than Tashkent (Namangan, Samarkand and Andijan) with a population of 350 to 450 thousand inhabitants are below the curve. Despite the fact that all these cities are large, they were smaller in size than one would expect. Those, in Uzbekistan there are no large cities with a population of 500 thousand to 1 million people. In Uzbekistan, there is a large number of cities with a population of 12 to 30 thousand inhabitants. Thus, Uzbekistan is a country with one large metropolis, a large number of small cities and the absence of large cities with a size of 500,000 or more.

Such urban development has a number of implications for the medium-term development of Uzbekistan and economic policies aimed at stimulating economic growth. The task of the urban policy should be to stimulate the process of forming 2-3 city agglomerations that can reduce the demographic pressure on the city of Tashkent and ensure a more even regional development, when these large cities have to act as points of growth and supporting nodes of the city framework.

The key problem of small and medium-sized cities of Uzbekistan is their single profile, inherited from the planned economy, as a result of which the countries of the region could not successfully integrate these cities into the new matrix of socio-economic development. As a result, small and medium-sized cities today are faced with a lack of effective programs and financial resources for development, deterioration of production and transport infrastructure, and environmental problems. The unsatisfactory condition of transport communications is superimposed on the greater remoteness of some cities from the regional centers. Due to the low level and quality of life, high unemployment, small cities lack qualified workers and specialists in all sectors of the economy.

Uzbekistan At the beginning of 2013 in Uzbekistan there are 102 small and medium-sized cities (with a population of up to 50 thousand people), in which the population continues to grow. Most of them are cities, representing the administrative centers of districts, whose economy largely depends on the work of 1-2 large enterprises.
Today, the population of small and medium-sized cities in the total share of the country's urban population is 34% (excluding urban settlements). But if we exclude monofunctional small and medium cities (Uchkuduk, Zarafshan, Angren, Mubarek, Asaka), then other small and medium cities (the remaining 97) yield no more than 17.5% of the industrial output of the country. There is a disproportion: in terms of population, small and medium-sized cities are more than a third of the country's urban population (and it will grow), and their share in industrial production is less than one fifth of the country's industrial production. Thus, the potential of small and medium cities as centers of industrial development remains untapped. According to some forecasts, by 2025 the population of small and medium-sized cities of Uzbekistan can reach 4 million people.

In this regard, it is extremely important to increase local capacities in formulating, implementing and monitoring socio-economic development programs focused on small and medium-sized cities.

In Uzbekistan, the deterioration of the water supply, sewage and heat supply networks is 39%, 20% and 19%, respectively. More than 50% of underground gas pipelines are operated over the standard period. Estimated losses of heat, drinking water and electricity reach, respectively, 60%, 40% and 25%, and natural gas - more than 0.5 billion m.

**Major conclusions**

Over the past quarter century, Uzbekistan has witnessed complex processes of urbanization and urban development. This was due primarily to the consequences of urbanization in the Soviet period, which led to the emergence of single-industry towns, the predominance of the extractive industries and the agricultural and raw materials specialization of the countries of the region.

The efforts of the country's leadership in reforming the hypertrophied economy and its adaptation to the market economy system was ambiguous, having a significant impact on the demographic and socio-economic picture of the region. During the transition period, the differentiation of the regions in terms of socio-economic development deepened in the country, the gap in the level and quality of life of the rural and urban population widened, the problems of small and medium-sized cities were revealed. In some countries of the region, there was a process of de-urbanization and de-industrialization.

As a result, today a “concentration model” of urbanization has developed in the republic, in which the population and economic growth are concentrated in large and major cities, and those, in turn, do not cope with the growing influx of people in underdeveloped cities and regions. There are serious problems in the system of municipal government and city budgets, the load on the existing urban infrastructure is increasing due to its deterioration.

In today's fast-growing economy of Uzbekistan, urbanization thus becomes a new challenge for cities and urban infrastructure, which is among the most energy-intensive, labor-intensive and capital-intensive industries. At the same time, urbanism represents a new challenge in the field of technological renewal and modernization of the urban economy, and not only the urban one. Thus, urbanization and the formation of agglomerations surrounded by megalopolises affect the territorial distribution of industrial enterprises and transport infrastructure facilities.
REFERENCES


THE EFFECT OF INDIVIDUAL AND GROUP LEARNING FORMS IN THE TEACHING OF ORGANIC CHEMISTRY AT SCHOOL STUDENTS

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ABSTRACT

In this work, the influence of individual and joint learning activities on the process of studying organic chemistry studied. Spreads of individual and mulberry activities of the senior classes in terms of academic performance in the field of organic chemistry are compared. Individual learning activities show that students are more interested in collaborative learning activities. At the initial stage of the group activity, the group composition is voluntarily selected. The formation of tolerant attitude towards each student in the group depends on the team leader. Most chemistry teachers have found that the reare old ways to use the classroom, such as using the lecture method, and expressing their ideas with illustrations and illustrations. As it is known, when teaching the lecture method, only 5% of the student’s learning content is identified. This tutorial is a way to educate teachers on a broad range of subjects and to work on them. Individual training is reflected in programmed learning, independent learning, and computerized learning.

KEYWORDS: Achievement, Organic Chemistry, Cooperative Learning, Individualized, Instruction, Learning Activity Package.
INTRODUCTION

The science of chemistry is a natural science, which is of great importance for the country's scientific and economic potential. The science of chemistry is a science that studies the changes that occur in these substances as a result of various substances that form the basis of the universe a roundus. The science of chemistry plays a central role in other disciplines, in the field of medicine, biochemistry, microbiology, pharmaceuticals, industry, oil industry and others. Moreover, as many scientists acknowledge, the science of chemistry is the basis of national development. The science of chemistry is the key to understanding the essence of most of the processes associated with the world around us.

RESEARCH BACKGROUND

Although the science of chemistry is so important in society, there are a number of difficulties and challenges facing the development of this science in school education. The main reason for this is the lack of well-educated and qualified staff, the shortcomings in the curriculum, the complexity of the curriculum, the insufficient interest of the pupils to the science, the inadequacy of science by the teachers, organizing a classroom without the use of modern techniques and teaching aids, and soon. Most chemistry teachers have found that the are old ways to use the classroom, such as using the lecture method, and expressing their ideas with illustrations and illustrations. As it is known, when teaching the lecture method, only 5% of the student's learning content is identified. The lecture is a longtime monologue presentation of a large amount of study material. This method is a method of instruction that is entirely through "talking". It lasts 40 minutes or more and usually does not allow any student to participate.

METHODOLOGY

Advantages of the "lecture" method:
- relies on scientific knowledge;
- It is well-suited to time;
- The teacher has the opportunity to fully control the learning process will be.

Disadvantages of the "lecture" method:
- Students become passive participants;
- teachers and students cannot communicate directly;
- It is difficult for students to master a great deal of knowledge;
- Listening carefully for a long time;
- Because the grade of memorization is different for all students, the class the development rate may be low.

Main part

The consistency of explaining individual teaching materials in education is selected based on the individual abilities and interests of each student. This tutorial is a way to educate teachers on a broad range of subjects and to work on them. Individual training is reflected in programmed learning, independent learning, and computerized learning. The individual learning method ensures that learners are actively involved in the learning process and also helps overcome
existing problems in different aspects and indicators of education. Individual instructions for the reader to traditional education can not be achieved through self-control, to improve the characteristics of the environment occurs, the formation of the relationship between teachers and students.

Educational group teaching methods are used in a number of student searching and trying to find a solution on the problem together, support each other in this process. This step-by-step process of joint activities in the course will lead to the development of students' academic skills, increase their knowledge to the long-term persistence. Readers joint cooperative activities will become their organic chemistry and a better understanding of the theoretical principles and practical skills on the subject from the control questions and tests to determine the performing much better. Individual learning activities show that students are more interested in collaborative learning activities. At the initial stage of the group activity, the group composition is voluntarily selected. The formation of tolerant attitude towards each student in the group depends on the team leader.

**DISCUSSIONS**

In general, the teaching of organic chemistry at the school has shown that both individual training and collaborative teaching have a great positive effect. Recent studies have shown that the teaching of organic chemistry is influenced by a combination of cultural values. In 1999, according to a study by I.Chun, it was found that girls had higher levels of uptake of organic chemo boys than their peers. However, research by other scientists denied this.

To study the impact of the various teaching methods on the students, three classes of three high school students (30 students in each class) were taught. Group I lecture method, second in class collaborative teaching, and group III in person. The findings of the study showed that the first-year students in the classroom showed that the level of girls' development was higher than that of men. But this is not so significant.

**CONCLUSIONS**

As a result of the research, three classes of students have no effect on the sex of learners in learning the subject. However, the method of co-teaching and individual learning was more significant than the methodology of the lecture. When analyzing the efficiency of methods, it was found that the most effective was co-education, and the lowest result was a method of presentation.

Researchers conclude that chemistry classes should be more participatory in teaching and using individual teaching techniques to improve the teaching of organic chemistry.

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FAMILY EDUCATION INSTEAD OF PERSONNEL IMMUNITY OF THE YOUTH AND PUBLIC HEALTH

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ABSTRACT

This article discusses the issues of increasing the ideological immunity of young people in the process of globalization. The article also analyzed the importance of philosophy education and the development of philosophical education in the protection of young people from the ideas that affect the world outlook. It plays an important role in intensively developing and changing social life. Most of our historical publications have a clear picture of the development of society. Looking back at this point, we once again admit that the upbringing of perfect people, upbringing harmoniously developed generation is an important and urgent task for our society. Based on philosophical knowledge, a person is aware of the world he has built and uses it in various ways. However, until now, no one has been able to express a single point in the matter of knowledge and truth. The peculiarity of philosophical thinking is that such thinking is submissive to rationality, internal harmony, conflict, and proving. In summary, every renewal of our society is aimed at strengthening the national idea and ideological immunity directly or indirectly. At the beginning of the 21st century, the acceleration of the pace of life and the increase in the flow of information cause the authoritative sources to have a new meaning and appear in different ways.

KEYWORDS: Ideological immunity, globalization, internet, philosophy, philosophy education, national idea.
INTRODUCTION

At the beginning of the 21st century, the acceleration of the pace of life and the increase in the flow of information cause the authoritative sources to have a new meaning and appear in different ways. Young people of our society receive not only educational institutions, but also the mass media and the Internet. Along with receiving useful, relevant information, they also encounter information that is directed against our spiritual values. "Today's tactic, which seems insignificant at the point of view of human morality, can be greatly damaged by the gravity of globalization in the world of information, which is invisible, but not covered by anything." [2] B. 115. Some young people are worried not only by their parents, teachers and coaches, but also by the mass media, as the Internet, as the information they receive, and their confidence in determining their relationship to life. They do not pay attention to the source of information, their skillfulness, but they are interesting and appropriate. Some of the Internet, some of the Internet's data, have a negative effect on the work of educational institutions, whose personal experience is shaped by the fact that the personal experience is a lie, and that is not enough to distinguish between truth and youth.

Speaking about the upbringing of the younger generation, Shabkat Mirziyoev, Abdurauf Fitrat drew attention to the following remarks of our ancestors: "The people should move toward a concrete goal, be a state, be happy, be glad or weak, slavery and slavery depend on their children's upbringing by their parents "[1. B. 124].

Analyzing the essence of the reforms, we see today a new approach to education and upbringing of young people. The harmony of this educational system is linked to their interdependence. At the same time, spiritual maturity is emerging as the key to overcoming many problems. This can be seen by studying our historical, philosophical and ethical heritage. Most of our historical publications have a clear picture of the development of society. Looking back at this point, we once again admit that the upbringing of perfect people, upbringing harmoniously developed generation is an important and urgent task for our society. The following statements of the President are important in this regard: "We need to develop a national idea which will be a source of strength for us to implement the challenges that we face.

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science and the combination of problems create new opportunities for the expansion of scientific and practical activities of humanity. Human beings will not only be able to derive the systematic knowledge of their essence, society, nature, and thinking through their minds, but also on the basis of which they seek to produce important conclusions that are important for the development of scientific thought and practice. As a result, new discoveries for science see the world.

This is a unique achievement of science. It's no secret that today's view of philosophy is changing dramatically. Formation of the ideological immune system of the youth, upbringing their outlook and improving their attitude to the world are among the topical issues of today's world. Because the younger generation is the continuation of tomorrow's day.

Based on philosophical knowledge, a person is aware of the world he has built and uses it in various ways. However, until now, no one has been able to express a single point in the matter of knowledge and truth. Therefore, in the field of geniosis and epistemology of philosophy, deep study is currently being carried out.

Today, human society is gradually rising out of the limits of the sense of freedom of expression. Philosophy points out that these values are not transient; life without value is meaningless. In today's social life, values and relationships are changing, and intellectual wealth is crucial. Under such circumstances, the need for scientifically-philosophical knowledge in the system of factors that contribute to the development of every person, nation and country in the world is becoming a vital necessity for a serious study of the laws of social development, in particular the creation of new ideas, theories or doctrines of humanity. An effective solution to this problem, in many ways, depends on the subject of "philosophy" and its development. Therefore, it is important today to increase the effectiveness of the work aimed at extensive study of this science, its consistent teaching and advocacy. First of all, it is necessary to clearly define the science of "philosophy", its essence and significance and theoretical-methodological significance as well as to understand the use of this science in social life and creative activity.

It should be noted that in fact, the systematic content and status of philosophy is defined by a system of philosophical sciences such as ontology, methodology, gnoseology, axiology, prismology, logic, ethics, aesthetics and so on. B. 424]. Each of these sciences is both theoretical and methodological as a system of specific scientific approaches and principles.

Thus, when philosophical ontological, methodological, gnoseological, axiological, pragmatic, ethical and aesthetically problematic issues are studied in each of them, the content of the issues is dialectical, from the simple to the complex, from the top to the theoretical and practical. In this case, the initial characteristics in each case (starting with ontological content) are realistic, rational and can be relatively unreasonable or ideal in later stages. For example, if the basic initial description of the national idea is relatively realistic, accurate and rational in ontology, it could be an ideal character, coming to aesthetics, in a certain sense and in a position, irrational. At the same time, in the coverage of any aesthetic (or ethical, gnoseological, axiological or other) issues of national ideology and ideology, their ontological content may have been explicitly and rational, and then may have irrational or ideal content in certain situations and characteristics. The real and ideal situations, rational or irrational aspects of each issue should be described on the basis of relevant philosophical principles. Thus, the thing, event or process that is being studied begins with ontology, and a relatively systematic description of morality and aesthetics.
So, it is necessary to pay special attention to the above issues in the philosophical analysis of the problem, as well as to evaluate the scientific research works and to define them.

So far, the role of science and philosophy has been greatly enhanced to educate a perfect man today, which is an important task. Throughout the centuries, the problem of perfect human being has been urgent, since its role in the development of society has been remarkable. The philosophy of natural and social sciences will also contribute to this path. However, the demand and desire of the new era also require that. The peculiarity of philosophical thinking is that such thinking is submissive to rationality, internal harmony, conflict, and proving. In summary, every renewal of our society is aimed at strengthening the national idea and ideological immunity directly or indirectly. It plays an important role in intensively developing and changing social life.

REFERENCE:


CONCEPTUALIZATION OF PROFESSIONAL DEVELOPMENT OF TEACHERS

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ABSTRACT

Education is prime responsibility of any society. It needs to uncultured their children. This responsibility is majorly fulfilled by teachers as a prime instrument. Between teachers and students, a well designed curriculum is transacted using skills, strategies and teaching methods. Transaction of curriculum to students is something which require skilled strategies and methods according to psychological state of students, organizational climate and nature of content. This skill of transaction of content is the basic requirement for the professional development of teachers. We could say it as “Language of Teaching” as without knowing language one is unable to communicate how & what he wants to. This research paper is an attempt to explore need, importance, challenges and suggestions for professional development of teachers.

KEYWORDS: Professional Development, Teachers, Challenges, Teaching Skills.

INTRODUCTION

“Those who educate children well are more to be honoured than they who produce them; for these only gave them life, those arts of living well.”

- Aristotle

Teachers are considered to be the builder of the nation. In other words, the future of the nation lies in the hands of teacher. One can realize how important education is which makes one a teacher. Teaching is a profession—indeed a noble one, conceptual and ideal. It is also different from other professions because it is engaged in human development activities. It is only in the case of teaching there is much more that is required to be accomplished than in the case of
other professions. Training of the teachers on regular interval is considered to be one of the important characteristics of their professional development.

**Concept of Professional Development:**

According to the thesaurus of the Educational Resources Information Center (ERIC) database, professional development refers to “activities to enhance professional career growth.” Such activities may include individual development, continuing education, and in-service education, as well as curriculum writing, peer collaboration, study groups, and peer coaching or mentoring. As the definition of, “Professional Growth” is given in the Dictionary of Education by Carter V. Good; Professional Growth means increase in subject matter knowledge, teaching Skills and efficiency and insight in to educational problems with a concomitant increase in success a teacher. Professional development, in a broad sense refers to the development of a person in his professional role. According to Ganser (2000) Professional development includes formal experiences such as attending workshops and professional meeting and mentoring etc. and informal experiences such as reading professional publications, watching television documentaries related to an academic discipline etc. According to Glatthorn (1995) the conception of professional development is therefore broader than career development, which is defined as “the growth that occurs as the teacher moves through the professional cycle”. According to Kedzior and Fifield (2004) effective professional development is a prolonged facet of classroom instruction that is integrated, logical and on-going and incorporates experiences that are consistent with teachers’ goals; aligned with standards, assessments, other reform initiatives, and beset by the best research evidence. Odebero, (2010) described professional development as sustained focus over time that is consistent with best practice. Joyce & Showers (2002) stated that the Process of Professional Development Professional development should be designed around research-documented practices that enable educators to develop the skills necessary to implement what they are learning.

Many professional such as teachers, professors, army officers, health care professionals, lawyers, accountants and engineers engage in professional development. Individuals may engage in professional development because of his interest in continuous learning, to improve professional ability, accelerate career progression and to adapt new technologies and practices. Professional development means skills and knowledge gained for both personal development and career advancement. There are various ways for professional development of teachers like orientation programs, refresher courses, seminars, conferences, consultation, coaching, lesson study, mentoring, reflective supervision and technical assistance etc. Professional development may also come in the form of pre-service or in-service professional development programs. These programs may be formal, or informal, group or individualized. Individuals may pursue professional development independently, or programs may be offered by human resource departments. Professional development on the job may develop or enhance process skills, sometimes referred to as leadership skills, as well as task skills.

**Types of professional development:**

- Orientation Programs (For newly appointed teachers of higher education)
- Refresher Courses (on subjects matters)
- Faculty Induction Programs
- Online courses (SWAYAM, ARPIT etc)
- Workshops (e.g. on subject matter or methodology of content-related topics)
- Educational Conferences or Seminars (at which teachers and/or researchers present their research results and discuss education problems)
- Qualification Programs (e.g. a degree or diploma programs)
- Observation visits to other institutions
- Individual or collaborative research on a topic of educational interest
- Reading related literature to their area of research work. (e.g. journals, evidence-based papers, research-thesis)
- Active feedback from students and colleagues on improvement of teaching.

**Need of professional development of teachers:**

Quality of education is depends upon quality of the teachers. Thus role of teachers is very important in shaping future generation. All the commissions and committees always emphasized the need of professional development of the teachers. Policies in India supporting professional development of teachers are following:

**Mudalier Commission** report pointed out that “We are convinced that most important factor in contemplated educational reconstruction is the teacher, his personal qualities, his educational qualification, his professional training and the place he occupies in the community”. No doubt for professional development of teachers professional training of the teachers is one of the gross root requirement however, different commissions suggested different programs for the professional development of teachers.

**National Educational Commission (1964-66)** suggested that for the professional development of teachers orientation programs are very important and also recommended that in-service training for teachers should be organised by universities and allow every teacher to receive 2-3 months of in-service training once in five years.

**National Policy on Education (1986) and Program of Action (1992):**

National Policy on Education 1986 in its Program of Action states that-

- To organize specially designed orientation program for all new appointed teachers.
- To organize orientation program for the teachers.
- To organize refresher courses for the teachers at least once in five years.
- To encourage teachers to participate in workshops, seminars, and conference etc.

**Mehrotra Committee (1987) (Revision of Pay Scales of Teachers in University)** suggested orientated program of 3-4 weeks for the freshly appointed teachers. The emphasis should he laid on the methodologies of teaching in the concerned subject.

**Ramamurthy Committee (1990)** recommended that there should be one year training after appointment of the teachers for their professional development.

**Importance of Professional Development:**

According to Joyce and Showers (2002) for effective professional development programmes should be based on curricular and instructional strategies that have a high probability of affecting students’ ability to learn and in turn students’ learning achievement. In addition, professional development broaden and deepens teachers’ subject matter knowledge and contributes in new
knowledge to the profession. It enrich teachers’ knowledge of the subject’s content and sharpen teaching skills and classroom skills. It contributes new knowledge to the profession and increases the ability of teachers to monitor student work and make them capable to identified gaps in student achievement. It supports interaction among master teachers that takes place over extended periods of time. It provides opportunities for teachers to try skills and strategies in classroom and receive feedback from students and peers.

Challenges to Professional Developments:

Studies show that many challenges exist with regard to successful implementation of professional development. Parvez, M. (2009) explained barriers to fulfilment of professional development include time, accessibility, staff motivation, marketing and advertising, and financial issues. According to Ian, H. (2010) age, staff shortages, unsupportive managers, staff attitude, availability of programs, work pressure, family commitments, unsafe environments, and participation on own time are also identified as barriers. Generally there are many challenges in professional development of teachers. The three major categories of barriers of professional development are as follows:

Psychological barriers: In the process of professional development, college teachers often have psychological barriers due to various problems. Some of the psychological barriers are teachers lacking positive attitude and motivation, interest, confidence, lacking awareness and reluctant to learn new techniques and technologies and teachers having stress and frustration.

Administrative barriers: Teachers faces many administrative barriers to acquire professional development like, poor administration and government policies, lack of physical & financial facilities, inadequate time & funding.

Material barriers: In quality professional development teachers faces various material barriers like time commitments, energy demands, work environment, family support.

Recommendations for educational institutions:

- The educational institutions should encourage the teachers to acquire higher degrees. It will help to enhance the profession knowledge of the teachers.
- Organizing regular professional development programs like orientation programs, refresher courses and invite subject wise experts for the seminar and workshops will help teachers to learn new skills and new teaching technique.
- Financial assistance should be given to the teachers to undertake research work and projects related to teaching-learning process.
- The private schools management should encourage teachers to actively participate in workshops, seminars and similar professional development programs organized by the education department.

Recommendations for teachers:

- The teachers themselves should show keen interest in acquiring higher degrees.
- Teachers should properly utilize the available resources and acquire new skills and technique by attending periodical professional development programs, refresher courses, meeting the subject wise experts, seminar and workshops.
CONCLUSION:

Teachers play a pivotal role in the improvement of the quality of education. Education is a continuous process and no formal training in an institution can fully prepare a person for professional service. The continuous learning is important as teachers knowledge lags behind due to continuous expansion of knowledge in the field of teacher education on a regular basis. Hence, the training of the teachers carries special importance. Professional development of a teacher implies his mastery in knowledge of the subject, in pedagogy and teaching techniques. In assessment of the educational system, it is necessary to know whether there are sufficient teachers, who are not only well qualified to teach their subject contents, but are also able to keep pace with the changing curriculum, develop innovative methods, strategies and pedagogies of teaching and growth in knowledge. It is crucial to know about the facilities that exist for improving their knowledge and enhancing their teaching skills. Therefore, in order to befit the teachers to their roles, a good professional training is required. Faculty induction program and continuous education thereafter equips the teachers with adequate knowledge and skills to perform their professional functions.

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