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THESIS BOOK SUMMARY

**Teachers' Informal and Non-formal Learning in Multilingual Education:
The Case of Kazakhstani Higher Education**

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Budapest, 2022

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List of publications

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INTRODUCTION

Background of the problem

The concepts of informal and non-formal learning have recently started to be used widely in the world. Currently, most of important and relevant knowledge, skills are acquired through the lens of informal learning. Informal learning contains discussions, communication, collaboration, mentoring, social interaction, and group work (Le Clus, 2011). Informal learning also results in collaboration or networking among the colleagues who are expert or more competent in a specific area in order to assist in gaining knowledge and insights where learners may or may not have disposition when learning happens; learning can also be fulfilled implicitly in the process of doing some activities as well (Le Clus, 2011). Especially, in the process of implementing new educational reform (multilingual education program) in the context of higher education institutions, teachers' informal and non-formal learning is a necessity.

Problem Statement

Formal learning – intentional, organized and structured, guided by curriculum or other type of formal program.

Non-formal learning- may or may not be intentional or arranged by an institution, loosely organized, no formal credits granted.

Informal learning- never organized, guided by a rigid curriculum, experiential and spontaneous (OECD n.d.; Werquin, 2007).

Informal learning is a part of learning continuum and regarded as a means of acquiring knowledge and skills in informal conditions and as indicated by Matthews (2013) 70 per cent of knowledge and skills are gained informally. The role of informal and non-formal learning is more important for the academics particularly in the process of implementing and integrating new educational reform. In the context of higher education institutions, teachers' learning, and their professional development plays a pivotal role, contribution of which to students' academic achievements is crucial. The issue of introducing and supporting innovation practices in the education systems brings about changes, and it is essential to consider the local interests, will and capacity in the implementation strategy to put into practice educational reform (McLaughlin, 1990). The motivation and will, needs and interests of teaching staff responsible for implementation are relevant and indispensable in order to reach successful practice of innovation in the field of education (McLaughlin, 1990). In addition, the pattern of innovative process is usually accomplished by the agents (inventors, adopters, national development agencies, researcher and practitioners, educational entrepreneurship etc.). They collaborate and cooperate on specific issues and creating new practices and ideas (Halász, 2018).

It is important to study and explore teachers' informal and non-formal learning in multilingual education in the context of Kazakhstani higher education institutions. "Both formal and informal learning are regarded as core processes in the development of multilingual identities and skills" (Björklund et al., 2013). Introduction of multilingual education as a new educational reform in Kazakhstani universities led to a variety of challenges and obstacles mainly for teachers in the process of practical implementation. It focuses on teachers' learning who conduct lessons in multilingual groups. The main issue is that teachers were not formally prepared for the multilingual program in terms of methodological and pedagogical perspectives since the courses should be taught in English. In one hand, teachers encounter a range of challenges in conducting and delivering lectures and preparing seminars in foreign language, on the other hand they suffer from the lack of teaching resources leading them to the paucity of their time and overloadness. Informal

and non-formal learning opportunities are the basic ways for their professional improvement and personal growth as well as for adapting to trilingual program.

Research strategy

Purpose of the research

The author of this research attempts to examine teachers' learning in terms of informal and non-formal conditions in the context of multilingual education in Kazakhstani universities. The purpose of this study is to explore how faculty members participate in multilingual education program and what kind of main challenges they encounter; how university teachers learn informally and non-formally in the context of multilingual education; how teachers participate in informal learning activities as well as how faculty leaders contribute and support academic staff in the development of multilingual education. The main focus is two different universities situated in the Northern part of the country. It also aims at identifying the possible and important insights, suggestions and advice from Hungarian experts related to the educational policy implementation.

Research questions

The basic research questions that we are intending to explore are how the faculty members' informal and non-formal learning facilitates the development of multilingual education in the context of Kazakhstani higher education institution. In this study there are three main research questions followed by their sub-questions:

1. How do the teachers participate in the multilingual education program in Kazakhstani higher education institution?

Hypothesis 1: Teachers' participation at regional state and national universities level's multilingual education is ambiguous and is possible to discover different attitudes and towards it, as we are investigating the activities of teachers belonging to different scientific disciplines.

- 1.1 How do the teachers get prepared to participate in the multilingual education program?
- 1.2 What challenges do the teachers and professors encounter while working in multilingual program?

2. How do the teachers practice informal and non-formal learning in multilingual program?

Hypothesis 2: At regional state and national universities level teachers participate intensively, at daily level in informal learning activities for making better the ME and is possible to explore different learning patterns as we are investigating the activities of teachers belonging to different scientific disciplines.

- 2.1 What kind of typical teacher clusters can be identified in multilingual education? What is their typical approach to the concept of multilingualism?
- 2.2 What kind of informal and non-formal activities they are engaged in?
- 2.3 How do the teachers learn and participate in informal learning activities in the frame of multilingual education program?

3. What kind of views do the faculty leaders have on multilingual education?

Hypothesis 3: At the regional state and national universities level faculty leaders intend to support multilingual education development but, in some cases, they are lacking tools for greater effectiveness.

- 3.1 What kind of support and motivation faculties are providing to the teaching staff?
- 3.2 How do faculty leaders interpret faculty members' informal and non-formal activities in the process of multilingual education?

4. How to make more successful and efficient the implementation of multilingual education program in Kazakhstani HEIs?

- 4.1 What kind of important actions should be accomplished at Macro, Meso and Micro levels?

Significance of the study

Current research study deals with the significant issue related to university teachers' learning formality which is, as far as we know, not explored in the context of Kazakhstani higher education: formality of learning in terms of informal and non-formal conditions, conceptualization of educational policy mainly of multilingual education. This study is dedicated also to the importance of exploring teachers' informal and non-formal learning in the context of multilingual education in Kazakhstani universities. In the framework of this project, it investigates informal and non-formal learning activities in which teachers are, what kind of challenges they encounter.

This study is significant in terms of *educational research*:

This research may serve as an important theoretical implication in terms of informal and non-formal learning for the Kazakhstani research development.

- It provides with future research opportunities for the study of multilingual education and its peculiarities as an important theoretical input.

This study is significant in terms of *educational policy*:

- This research study may serve as an important input for the policymakers to be aware of the implementing process of multilingual education program as a reform at Kazakhstani universities. The research results can be useful for policymakers to make a revision for the educational policies in order to advance and facilitate to the development of multilingual program.
- This study may assist to the policymakers for directing to the contextual issues while implementing a reform in practice. Taking into consideration the findings identified in this research, policymakers may facilitate educational institutions with possible and necessary needs for reaching effective and successful implementation of multilingual program in practice.

This study is significant in terms of *Teachers' learning*:

- This study facilitates to the teachers' learning in terms of informal and non-formal conditions. As a result of this study results, it addresses and provides with detailed information dedicated to the teachers informal and non-formal learning activities in the frame of multilingual program.
- It provides the teaching staff with specific informal and non-formal learning activities that may be useful for university teachers in adapting to a new reform to make effective professional development.

This study is significant for *Faculty leaders*:

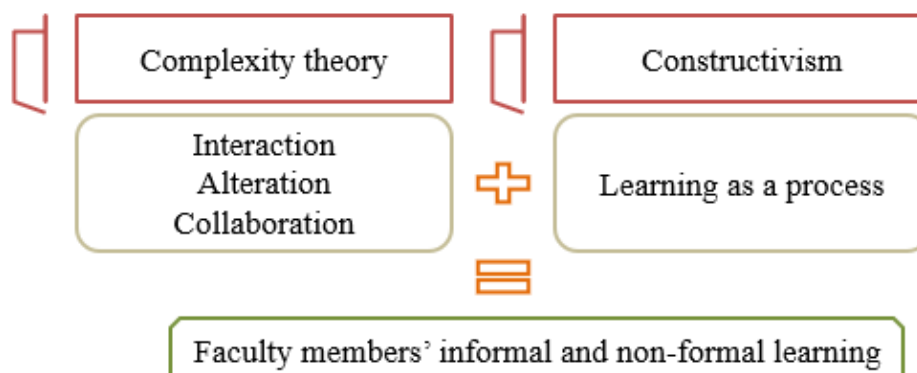
- This research identifies the main challenges and hindrances the university academics encounter in the process of implementation practice of multilingual program. These results may assist the faculty leaders to prevent and eliminate the gaps. It may also help them to determine the weaknesses and strengths of the faculty members and put much effort where necessary to provide support.
- It provides with the essential theoretical input for the faculty leaders in term of the implementation of faculty development programs in Kazakhstani higher education institutions for providing effective and successful professional development for the teaching staff.

The significance of this study is provided in detail related to the theoretical and practical implications as well as contribution for the further investigation on the bases of this research results.

THEORETICAL FRAMEWORK AND RESEARCH DESIGN

As the complexity theory together with constructivist one seem to be offering an adequate framework, they are taken as the theoretical frame for this research. Complexity theory and Constructivism helps to identify teachers learning through interaction and interrelation as well as building knowledge based on the learning process.

Figure 1. Integrated theoretical framework of the research



Source: Own compilation

Complexity theory

In the field of education, the role of complexity theory takes hugely important place where the main central focus is given to the roles of educational actors such as teachers, educators, alumni, educational leaders, organizations and its departments, parents. In this case of education as a whole, in order to shift or affect any alteration in the education area, the change in a definite factor is not sufficient despite the fact to what extent it is influential or not for reaching shifting in the complex system (Mason, 2008, p. 53).

The interaction and network are an integral part of complexity theory and therefore in the area of education the focus should be made on the emergence that takes place in the behavior of the phenomena drawing attention to each of the assembled elements and the intervention, connection among the levels of a complex system. Based on the complex, impulsive interaction among the elements and the agents the phenomenon is exposed to change and the old one to develop.

In the framework of education field, complexity theory emphasizes the importance and intrinsic role of the educational actors together with the curriculum. Whilst, from the perspective of the educators, the academics tend to change their roles, for instance, from being an expert to a facilitator, co-learner in order to amalgamate and combine the acquired new knowledge to the subsisting ones. Whereas the learners are also accountable for their self-development, reflection and to train autonomy. That each element has their own responsibilities and actions of execution within the complexity, but the vital feature lies on pervading and transforming the changes which are emerged inside them based on their interrelation, concatenation (Morrison, 2008).

The most significant implications of complexity theory in the framework of teacher learning can be characterized with the help of collaboration, reflection, management, and policy methods (Phelps., & Graham, 2012, pp. 385-388). Collaboration being a central focus in terms of interaction among agents, can be conceived as values, beliefs, attitudes, and assumptions of individual and

wholes as well. It is about building up special communities for teachers to collaborate and share experiences and knowledge. While integrating or putting in practice a particular policy especially in the context of education, it is extremely important to take into consideration teachers training and the role of teachers, their values, beliefs, motivation and attitude towards this or that direction by emphasizing the significance of collective and teamwork and dissemination of learning communities for teachers giving them more opportunity and resources to reflect (Ibid., p.388).

Constructivism

Constructivist theory is a learning and mental process of it where people learn from the prior knowledge by creating knowledge in collaborative community (Alanazi, 2016). In constructivist theory the learning is constructed and gained by a learner. Learning is constructed based on or integrated in the existing knowledge and experiences learners have. In this theory, learning takes place by interaction, problem-solving, collaboration and inquiry (Juvova, Chudy, Neumeister, Plischke, & Kvintova, (2015).

Individual cognition of learning is another significant aspect in constructivist theory due to that it relates and influenced by previous knowledge or experience of a learner. Learners should be involved and proactive in gaining knowledge (Ibid). Individuals build their own new understanding interacting them with already existing knowledge repertoire (Richardson, 2005, p.3). In the frame of constructivist theory, the role of a learner is more fundamental than teacher's role. Due to the fact that in constructivist theory, teachers are always in the role of a facilitator.

As learning is an active process in constructivist theory, teachers learning can be interpreted as an important insight in their professional development. In the context of multilingual education, teachers' learning in constructivist approach serves as supplementary and intrinsically important factor be it informal or non-formal. It also helps them to learn systematically and develop their knowledge, experience as well as skills in a specific domain of professional development. Constructivists approach together with Complexity theory contribute to explore teachers' learning in this study.

Research Participants

The condition of recruitment of the participants for this study was that faculty members were involved in the implementation of multilingual education program. The sample is divided between two different Kazakhstani higher education institutions: a regional state university (RSU) and a regional national university (RNU). The target group of the dissertation comprises three kinds of participants: 1) university teachers engaged in multilingual education; 2) faculty and /or department leaders. 3) Hungarian educational experts.

Table 1. Details of research strands and participants

Research tools	Sample size
Semi-structured interviews and Research diary	27 full-time instructors
Semi-structured interviews	6 faculty leaders
Semi-structured interviews	7 Hungarian educational experts
	<i>Total sampling size: 40</i>

Source: Own compilation

To reach the goal of teachers' informal and non-formal learning this study recruited university teachers (n=27). Both universities are situated in the Northern Kazakhstan and train professionals in different scientific disciplines (main field, based on the name of the faculties) both universities are launching and developing multilingual education from the 2017-2018 academic year.

The second layer was the on-line diary survey recorded in total (233 responses) different learning events of the faculty members. The participants of research diary were the most motivated ones among the interviewed cohort.

The third layer of the faculty members' sampling were the faculty and /or department leaders or principals (n=6). As it is determined, the principals are one of the main leverages and play pivotal role in the development and implementation of specific educational innovation.

To gain and acquire important data dedicated to the implementation of educational policy in practice and for making it more efficient, (n=7) Hungarian educational experts were interviewed.

This study implemented snowballing sampling method where the recruitment of respondents is reached through informants with others (Cohen et al. 2014). Snowball sampling is used as well for teachers' and leaders' interviews and for Hungarian educational experts group.

In case of the research diary, we implemented convenience sampling method, with the participation of volunteer recruited between the university teacher interviewees. Convenience sampling is used due to the fact that the research diary had to be filled out on a regular basis five consecutive days, and therefore, the researcher recruited the more motivated participants.

DISCUSSION OF THE FINDINGS

The purpose of this study was to explore how teachers participate in the multilingual education program in Kazakhstani higher education institutions; what kind of main challenges they face and how they learn in informal and non-formal ways. This research also attempts to investigate how faculty leaders support the development of multilingual education program in Kazakhstani universities.

In this chapter of the dissertation, the author endeavors to present the main findings of the research and interpret them in relation to the research questions.

Discussions of the findings related to the research questions

The main findings of the research are dedicated to the issues of teachers learning and their preparation for implementation and further development of the educational policy under question. These findings are taken from the interviews of faculty members from two different universities in the Northern part of Kazakhstan. Educational leaders started to train and prepare teaching staff involved in the implementation of this educational reform parallelly during the reform practice.

There are several hypotheses to each research question, it can be noticed if they are approved or not from the following parts.

Hypothesis 1: Teachers' participation at regional state and national universities level's multilingual education is ambiguous and it is possible to discover different attitudes and mentality towards it. (As we are investigating the activities of teachers belonging to different scientific disciplines).

The research results showed that faculty members get prepared from two perspectives: by the academics themselves and by the educational institutions.

The academic staff is usually involved in the following activities: *professional discussions, use of three languages in the class, preparing teaching materials from different sources, boosting communicative skills, use of their research in the class* (See Table 23). Whereas educational institutions provide them with *organizing workshops, seminars, conferences, English courses, interinstitutional training attendance, and directing to "Orleu" courses*. The main informal learning activities accomplished by teachers is discussion which is considered as a main source of

acquiring knowledge, and it is based on learners' initiation. While being engaged in multilingual program, university teachers have to use three languages in the classroom and prepare several materials themselves due to the paucity of resources. However, in the process of participating in multilingual program, the academic staff is the main educational agents who encounter challenges (See Figure 39): discrepancy in foreign language proficiency, paucity of teaching resources, use of three languages, preparing and searching for teaching materials causing overloadness.

Hypothesis 2: At regional state and national universities level teachers participate intensively, at daily level in informal learning activities for making better the ME and is possible to explore different learning patterns as we are investigating the activities of teachers belonging to different scientific disciplines.

While analyzing the interviews we've identified four main clusters of the academic staff who were involved in multilingual education policy at Kazakhstani universities such as *Active and efficient collaborators*, *Competitive lifelong learners*, *Challenge confronter* and *Passive job performers*. They are encountering different challenges (as it can be seen in detail in chapter 5.2.3) teachers from these clusters encounter and what kind of support the leaders provide them with. The belonging to the different clusters cannot be directly linked to the belonging to different academic disciplines.

Cluster 1 – Active and efficient collaborators: The main characteristics of this group of teachers involve intense participation in conferences and seminars as well as in professional discussions with colleagues by sharing knowledge and experience.

The academic staff belonging to this cluster were distinguished from the other clusters by claiming on frequent, and trusted collaboration. Another important activity expresses their strong collegial work while they attend each other's class. Teachers from the 1st cluster are seeking for different ways of implementing three languages in teaching to reach qualitative results in work performance. Such difficulties that they face emerged from the paucity of educational resources that university provides. Another problem is discrepancy in the level of English language proficiency of both students and teachers. Due to the fact that those manuals or books that university provide them were dedicated to the native English speakers. Teachers try to adapt these materials themselves and also produce a manual and a dictionary on a specific subject.

Cluster 2 – Competitive lifelong learners: This category of teachers is known with the following learning activities: strong orientation in research projects, regular seminar attendance, network building as well as implementation of specific teaching methods which was elaborated by themselves. Teachers form the 2nd cluster voluntarily strive to participate in conferences and other learning events for acquiring new knowledge. Important way of their collaboration is fulfilled in weekly seminars held in their department. This type of cluster is determined by their strong involvement in research activities with high interest. This cluster was also distinguished by an important action in which they use 100 % English language while conducting classes in a multilingual group. Competitive lifelong learners voluntary participate on self-paid basis in various kinds of English-Speaking clubs and other events for fostering and boosting their communicative skills in English. One of the challenges they come across was the low level of students' language proficiency. They claim that the university provide them with the multilingual documents as well and for that reason the administrative work takes additional time. The reward from the university in favor of these teachers is the extra payment as motivation for these teachers.

Cluster 3 – Challenge confronter

This category of teachers is involved in the learning activities mainly dedicated to the English language as well as limited participation in collegial collaboration. In case of this cluster main issue is in learning and practicing English language and related problems of communication and use of foreign language. Another issue of this cluster is overloadness of the academic staff, and

for that reason, teaching staff suffers from the lack of participating in diverse conferences and seminars.

Teachers of this category have to cope with language barriers and shyness occurring in the process of teaching in English. Challenge confronters are usually indulged in different educational events (conferences, seminars, master classes, workshops etc.) only, if they are offered or are part of requirement of their work.

It was evidenced in the analysis that Challenge confronters are not used to ask for a help or to make intensive collaboration with colleagues. They claim on their confidence of knowledge of their particular scientific discipline and insist that there is no necessity on constant discussions.

Cluster – 4 Passive job-performer

Passive job-performers are determined by their non-active attitude towards the fulfilment of different learning activities. They participate in educational events only if it is required by their head or institution. Even this cluster refuse to use the opportunity which is ready and handy. For instance, they were not involved in communication with foreign friends. This data also shows that teaching staff who knows English well use their native language in-between during communication. Another issue of this cluster is dedicated to the institutional requirements where teaching staff is accomplishing only those tasks that were pre-set by their heads or university leaders.

Further, the challenges concern the teaching resource provision from the universities' perspective. Faculty members are dissatisfied with the equipment that were not coinciding for them to conduct research works. Lessons, bureaucracy plus overloadness of teachers are another burden for this cluster. One of the negative aspects related to the fact that much of their time they spent on preparing for classes. This cluster also emphasize the discrepancy of language levels of the students.

The results of descriptive statistical analysis assisted to identify the ways of how faculty members participate in informal learning activities. The consequences evidenced that teachers are predominantly engaged in learning activities in the noon time between 2:00 PM and 4:00 PM with the lengths of mainly 10-30 minutes being engaged mostly in information gathering related to their professional knowledge via discussion and interaction with a person, mainly through only personal contact. The respondents played mostly the role of a learner and teacher whereas the same roles were played by their collaborators in the process of the learning activities. Relevant motivation for learning was job execution as well as the results emphasized that their learning activities predominantly occurred in the university building. The participants indicated the effectiveness and utility of the acquired new knowledge as mainly as almost good. As the results of correlational analysis, we found out several positive and negative moderate correlations among the variables. Weak correlations are also identified which is available in the Annex 9.

As for the effectiveness of the organizational innovation happening in these two universities, we relate to Halász's (2021) determination of different individual working clusters (routine man, dreamer, manager and innovator) as well as clusters (Horse cart, Truck, Glider and Rocket) related to organizational innovation measurement (p. 203). These clusters are not identical but similar to the clusters identified in this research. However, considering that multilingual education program is an innovation, and taking into account the clusters of this research taken from two different universities, we can compare them to the clusters of Truck (Regional national university) and Glider (Regional state university) according to their effectiveness and dynamism of organizations.

Hypothesis 3: Faculty leaders at the regional state and national universities level intend to support multilingual education development but, in some cases, they are lacking tools for greater effectiveness. In conjunction with investigating how faculty leaders support university teachers in multilingual education, the results of this research indicate several fundamental supporting tools.

The interviews with the leaders push us to conclude that predominantly their employers are engaged in language courses, round tables and department meetings. Faculty leaders strive to indulge teaching staff in participating in Bolashak program. Leaders' interview analysis evidences the motivation of academic staff (only for those who teach in English) in regard with financial support or reduction of workload depending on the university type. Additionally, supporting collaboration and peer learning is another important aspect by faculty and department leaders. It consists of such collaborative activities as: *Link*¹, cooperation, mutual support, mentoring and sharing information and experience.

The analysis of the interviews with teaching staff engaged in multilingual groups shows in what specific dimensions it should be worked intensively. Academic staff admit that the provision of methodological and teaching resources from the university leaders' perspective is the main issue for all the categories of teaching staff indicated in this research. Another important point is the level of English language proficiency of both teachers and students. The improvement or the preparation of foreign language skills of them is a necessity for making educational reform more effective and for avoiding academics from overloadness. Consequently, it is needed to train teachers effectively to be oriented and adapted to the new reform beforehand.

Hungarian educational experts² underlined several important elements that impacts on the effective development of multilingual program in general. Revisiting or piloting any policy is crucial for revealing pros and cons as well as the consideration of preparedness of academic units for that reform. In multilingual program, experts emphasized internationalization of universities as a significant aspect. Faculty members should be involved in several informal learning and supporting activities. Financial support is generally fundamental in all levels to reach success in practice.

Discussion of the findings related to the literature

In terms of literature the results are considered reflective towards multilingual education as an innovation in Kazakhstani higher education, the ways of teachers getting prepared for participating in this policy; challenges that faculty members encounter as well as teachers' learning in terms of informal and non-formal learning conditions; Hungarian educational experts sample. Furthermore, faculty leaders' support and view on multilingual reform. In addition, the findings of this research also made a fundamental contribution to the knowledge body in the framework of this subject.

First of all, it corresponds to the literature in the field of educational policy that it is highlighting educational agents' role, beliefs and values, motivation while implementing new educational policy. As the research findings underline social, political and financial aspects play pivotal role in in the policy implementation process. The same aspects were specified by Viennet and Pont (2017). The research findings determine several significant challenges that teachers encountered in the multilingual program practice. Similarities are indicated in the studies of McLaughlin (1990). Especially the paucity of teaching resource is underlined parallelly by (Sagyndykova, Svinarchuk and Kubrina (2017). Research findings demonstrated that faculty members elaborate the necessary manuals and other methodological and teaching handbooks themselves and the main issue results in the lack of English language knowledge (both teaching staff and students) which were also indicated by Sagyndykova et al (2017). The research results also emphasized that higher education institutions provide with different trainings, interinstitutional trainings for ("Orleu"

¹ "Link" is identified as explicated by the leaders, a group of teachers (2-3 teachers) one of them more experienced lead and organize methodological and pedagogical discussions on related themes.

² As was suggested the involvement of Kazakhstani educational experts into this research was taken into consideration after the pre-defence, however their investigation did not produce the expected results.

courses, “CLIL” courses “Bolashak” program, foreign language courses for the preparation) faculty members (Nessipbayeva, 2014; Irsaliyev *et al.*, 2017; Hillyard, 2011; <http://orleu-edu.kz/>).

According to literature on teachers’ learning opportunities, teachers’ learning is highly emphasized where they are usually engaged in a range of different professional activities and learning events which may also be on ongoing process (Stewart, 2014; Kennedy, 2009; Yates, 2007; Grodsky & Gamoran, 2003; Kennedy, 2005; Cole, 2012; Desimone, 2009; Smith, 2010). However, none of these literatures emphasize different categories and clusters of teachers’ learning performances and on learning specificities in multilingual program.

Literature on informal and non-formal learning made an attempt and contribution in determining significant ways of informal and non-formal learning especially from teachers’ perspectives. The results of this research revealed a variety of fundamental informal and non-formal learning events in which faculty members are engaged such as collaboration, discussions with colleagues, asking help, trial and error, task accomplishment, participation in different professional events (See Table 37). Those are reviewed in the literature part of based mainly on Paul Matthews (2013). Most basically these learning activities are very similar to those realized in the enterprises.

In the framework of multilingual education program, university teachers acquire most part of their knowledge and competences through informally and non-formally for enhancing as is indicated also in the study of Rogers (2014). Rogers underlined that most of knowledge is acquired through informal learning.

The analysis of literature and the data collected in this research from the faculty leaders acknowledges the fact that financial support for the academic staff from the university is the most effective and frequently implemented type of motivation, also demonstrated earlier by Tella., Ayeni and Popoola, (2007); Rowley (1996). In faculty leaders’ perspectives, frequently implemented support for faculty members are collaboration, mentoring, cooperation, mutual support, sharing knowledge and information as well as provision of different kind of educational event for enhancing their professional development. Those dimensions indicated by Siddique, Aslam, Khan, Fatima (2011).

CONCLUSION

It has been signified that in the process of implementing any educational reform, it is significant to consider the roles of the main educational actors (teaching staff). The preparedness of faculty members for the integration and implementation of the policy is essential in order to reach an effective and successful results in practice. Due to the fact that, faculty members are those educational actors who usually and always encounter the occurred challenges and obstacles in the framework of a new reform at educational institutions.

The main goal of this dissertation consisted in exploring the teachers’ informal and non-formal learning who are engaged in multilingual program in Kazakhstani higher education institutions. Since multilingual education program started to be implemented in the Kazakhstani universities, the faculty members were not prepared for the new educational policy beforehand. The faculty members engaged in multilingual program were neither theoretically nor practically trained in formal conditions for participating in that program. Therefore, this research is dedicated to study teachers’ learning in multilingual program through the lens of informal and non-formal learning conditions considering relevant and existing research questions of this study. All the participants of this research experienced bilateral preparation for multilingual program participation: preparation by themselves and by the educational institutions. Teachers’ training and preparation for the multilingual program started to function only in the process of policy practice and faculty members were also exposed to express initiation for additional learning and professional activities.

Main challenges that faculty members encountered in the practice of working in multilingual program were mostly dedicated to the low level of foreign language proficiency and paucity of the related teaching materials and resources which in its turn resulted in teachers' work overloadness and lack of their time. Moreover, the fundamental result of this research was different typology of clusters: Active and efficient collaborators, Competitive lifelong learners, Challenge confronters and Passive job-performers, each of these clusters is characterized individually. Their participation in a variety of learning activities through the informal and non-formal learning conditions are diverse.

The ways of teachers' participation in informal and non-formal learning activities are indispensable. The participants of the online diary experienced that they are mainly engaged in learning activities in the afternoon with the length of mostly 10-30 minutes where they are involved in mainly information gathering dedicated to their professional knowledge through the source of discussion. Teachers' informal learning activities are fulfilled through interaction with a person and in the form of only personal contact where they play the role of the learner or teacher. Job execution served as an important motivation for their learning activities which mostly took place in the walls of the university building, and they indicated the effectiveness of their learning activities mostly as almost good.

From the perspective of educational leaders in the framework of multilingual education, they provide support for the teaching staff in the form of provision of foreign language courses, organization of conferences, workshops and seminars and collaboration. These are the main elements for the teaching staff to be professionally advanced and promoted. As for the main source of the motivation for the faculty members, educational leaders provide teaching staff with financial support by diminishing their teaching hours (credits).

Complexity theory is implemented as an integrated theoretical framework for this study to explore teachers' learning in multilingual education as a complex system. With the help of complexity theory, it was possible to identify teachers' learning peculiarities through the interaction and relationship among the complex systems which brings change and alteration in teachers learning and behavior as an important input of the complex system. It offers move for development, decision-making and change on education. From the perspective of teachers' professional development and teachers' learning, complexity theory assists us to analyze and identify the changes and modifications in systems.

The findings of this research study will have important implications and valuable, fundamental insights for the development of educational policy, mainly in implementing multilingual education program in the context of Kazakhstani higher education institutions.

Potential implications for Kazakhstani context

Based on the research results of this study, it is necessary to indicate that possible important actions can be taken in the process of university teachers' learning in the framework of multilingual education program. For the *Educational research* perspective, the findings of this study may contribute to the detailed theoretical insights related to the multilingual education program mainly and teachers' learning peculiarities. *Policymakers* may acquire important and useful practical contributions from this research results to make revisions before putting in practice any educational reform for avoiding challenges and obstacles for the educational agents. Policy makers should modify and revisit or revise the reform considering the local capabilities as well as the preparedness of the university and necessary resources. From the findings of this research, policy makers as well as the educational leaders should consider the role of teachers' learning, teacher training before implementing specific innovation in practice. For the perspective of teachers, the main findings concern teachers' informal and non-formal learning in multilingual program. The *faculty members* may conceive the significance of their invisible learning activities which may

possible be neglected in the process. As the research findings indicated, *faculty or institution leaders* may determine what challenges and obstacle their teaching staff is encountering and what kind of support and motivation should be provided for their employees. Educational leaders may possibly use the faculty development program contributing to the enhancement and improvement of teachers' professional development in the related field to maximize the potential of their efficient professional preparation and training in the context of Kazakhstani higher education institutions. It is also significant for reaching the effectiveness of implemented educational policy practice.

Recommendations for future research

According to the nature and scope, this research achieved the goal and managed to answer all the research questions related to the teachers' informal and non-formal learning as well as the question on educational policy implementation. It should be indicated that, in the frame of this research, several recommendations can be made up for the future research.

Since the topic of teachers' informal and non-formal learning is a relatively unknown in the context of Kazakhstan, it requires to investigate further considering more universities for the sample from different regions. Current research results also indicate implications in the field of multilingual education and teachers' learning peculiarities. Teachers' informal and non-formal learning can also be explored in the field of other educational polices.

Special recommendation can be given to the faculty or institutional leaders for implementing faculty development programs for monitoring and observing and directing teachers' learning to identify what kind of support and motivation should be provided for them to reach effectiveness in their professional development and job execution.

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