

THE EFFECT OF INFORMAL LEARNING ON TEACHERS' PROFESSIONAL DEVELOPMENT: A CASE STUDY

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ABSTRACT

The aim of this research was to analyze the opinions of teachers working in High Schools on informal learning regarding if they had any informal learning in school environment, which informal learning activities took place, and if this learning had a contribution to their professional development. The research was a qualitative study with a multiple holistic case study design. Data were collected from interviews using semi-structured interview forms. At the end of the research, conclusions were classified under three main themes. The first main theme was that there were some informal learning activities which the teachers were engaged in. The second main theme was that most of the informal learning happened through talking and sharing resources and ideas with others. Especially teacher candidates experienced informal learning through observations of the practices of senior colleagues. The final theme indicated that the informal learning in school environment had a positive effect on teachers' professional development.

Keywords: Informal Learning, Professional Development, Trainee Teacher, Senior Teacher.

INTRODUCTION

As the world is changing rapidly, the needs of students who are growing with technology in a technology and information era are changing as well. Teachers have to work hard in order to cope with the educational needs of a changing and growing student body. Therefore, they have to continue professional development from formal, non-formal and informal channels.

Learning can be classified as formal, non-formal and informal learning. Formal learning can be defined as learning occurring within organized and structured contexts such as formal education and training. Non-formal learning occurs in an institutional context; but it does not include the formalities of grades, degrees, or certificates. Whereas, informal learning is different from these two types of learning. Informal learning is experiential and accidental learning (Colardyn & Bjornavold, 2004). Informal learning happens in one's life cycle continuously. It is any learning that occurs outside the formal curricula of schools or other educational programs.

Conversations, reading, watching TV, observing the world, observing colleague or friends, listening to stories, reflecting on a day's events, or stimulated by general interest can be counted as informal learnings. It also comprises visiting to museums or to scientific and other fairs and exhibits, listening to radio broadcasting or watching TV programmes on educational or scientific themes, reading texts on sciences, education, technology in journals and magazines, participating in scientific contests, attending lectures and conferences (Dib, 1988).

Livingstone (2001) defines informal learning as any learning activity which occurs outside the curricula of educational institutions, or the courses or workshops offered by educational or social agencies. In other words,

the form of learning is informal when it is done without sustained reference to an intentionally-organized body of knowledge in more incidental and spontaneous learning situations.

The Organization for Economic Co-operation and Development (OECD) defines informal learning as daily, work-related, family or leisure activities. It is not managed by any institution or curricula; rather, it is directed by individuals and their activities. In other words, informal learning is not directed by any organized or structured objectives, time or learning support (OECD, 2005).

The informal learnings gained at school environment can also help teachers' in their professional development. Professional development is defined as "the body of systematic activities to prepare teachers for their job, including initial training, induction courses, in-service training, and continuous professional development within school settings" (OECD, 2010: 19). Professional development is the essential requirement behind knowledge, skills, competence, and learning in the profession (Seferioğlu, 2004). Teachers need continuous support in order to have the necessary skills to meet the needs of different student groups in a rapidly changing world.

The OECD carried out their Teaching and Learning International Survey (TALIS) in order to help countries develop a high-quality teaching profession by better understanding who teachers are and how they work. There are 9 different professional development activities defined in this survey: (1) Informal dialogue to improve teaching, (2) Courses and workshops, (3) Reading professional literature, (4) Education conferences and seminars, (5) Professional development network, (6) Individual and collaborative research, (7) Mentoring and peer observation, (8) Observation visits to other schools, (9) Qualification programmes.

According to the TALIS survey, with the participation of more than 100,000 teachers and principals from 34 countries, the type of professional development most often mentioned was "Informal dialogue to improve teaching", with 93% of teachers on average reporting this activity during the survey period. After "Informal dialogue to improve teaching", the most frequently reported activities were "attending Courses and workshops" (81%) and "Reading professional literature" (78%). The least common types of professional development was "Observation visits to other schools" (28%) and "Qualification programmes" (25%).

Informal learning activities have a positive effect on new arrivals, since they learn from senior teachers through observing senior teachers and chatting with them in school environment. Some of the teachers interviewed reported sharing issues openly with seniors. Nawab (2012), states that the most common form of informal learning in this school is observation of seniors at the time of induction.

Bull & Buechler (1997) and Desimone (2009) state that the qualities needed for effective professional development include being individualized and school-based, using coaching and other follow up procedures, engaging in collaboration, and embedding practices into the daily lives of teachers (Nishimura, 2014). We can deduce that informal learning types such as; dialogue with colleagues and observing colleagues can be used for the Professional development of teachers.

In his paper with the title "Transforming Professional Development to Professional Learning", Steward (2014), states that learning for teachers in a professional community with other colleagues is more effective. In other words, it is more effective if professional learning activities take place within a working environment, are informed by data, and are centred on student work. Steward's findings also supports that learning from colleagues which is a kind of informal learning is an effective way of professional development.

Giust (2013) suggests teacher teams and e-learning as a way of informal learning for schools. He states that although there are several potential options for administrators to eliminate barriers to informal and incidental learning in the school setting, teacher teams and e-learning are two low-cost suggestions applicable for any school.

Lohman's study (2006) found that teachers engaged in three types of informal learning activities. First one is knowledge exchanging, in which teachers shared and reflected on others' practice and experiences. Second one is experimenting, in which teachers actively experimented with new ideas and techniques. Last one is environmental scanning, in which teachers independently scanned and gathered information from sources outside the school.

Harbison's (2008) study explores teachers' work-based informal professional learning. She suggests to including informal learning as an important path for Professional growth and re-valuating professional development systems. She adds that Professional growth is necessary for continual and consistent implementation of educational reforms and to better respond to the needs of ever changing society.

Shapir (2003), explores teachers' informal learning experiences in his research. Interview and survey results of this study indicate that many teachers believe they do engage in valuable informal learning experiences. Particularly important experiences include past non-teaching jobs, learning from one's past teachers, and familial relationships. Teachers' perceived learning focuses primarily on pedagogical skills and knowledge.

Hoekstra's (2007) study describes how experienced secondary school teachers learn at work in an informal environment. The main conclusion of the study is that in an informal learning environment, teachers learn through engagement in daily workplace activities.

Smaller (2005) found that there is a stark contrast to conventional notions of policy-driven, top-down teachers' professional development in his study. He suggests that new initiatives must include a much more sophisticated understanding of the complexities of teacher formal and informal learning, teacher knowledge and teacher professional self-identity.

According to the key findings of "Scottish Teachers for a New Era" Project, new teachers learnt informally from colleagues, peers and pupils. An important element in their learning was the level of support they received from the head teacher and their colleagues. The school could be seen as a workplace learning environment with various factors impacting on how expansive or restrictive it was to learn in.

The aim of this research is to analyse the opinions of the teachers working in High Schools on informal learning regarding if they had any informal learning in school environment, which informal learning activities took place, and if this learning had a contribution to their professional development. To achieve this aim, the answers to these questions were sought:

1. What do teachers understand from informal learning?
2. Does informal learning happen at school environment? If Yes, which informal activities takes place at school environment?
3. What is the contribution of the informal learning to teachers' professional development?
4. What do teachers think the informal learning is like?

METHODS

Sampling

This study was conducted in Göynük Science High School from January 1st, 2016 to January 31st 2016. One principal, 3 vice-principals and 23 teachers are working in Göynük Science High School during the 2015/2016 academic year. A non-probability sample technique based on the purposive sampling method was used because 'the sample derives from the researcher targeting a particular group, in the full knowledge that it does not represent the wider population, it simply represent itself. This is frequently the case in small scale research, for example, as with one or two schools, two or three groups of students, or a particular group of teachers, where no attempt to generalize is desired; this is frequently the case for qualitative researches such as action ethnographic or case (Cohen, Manion & Morrison, 2007).

Tablo 1: Participant status and accompanying data collection

Code	Working Year	Study-field	Interview
A	15+	Turkish	Yes
B	0-1	Physical Education	Yes
C	0-1	Biology	Yes
D	15+	History	Yes
E	0-1	Biology	Yes
F	10-15	Biology	Yes
G	15+	English	Yes
H	15+	Physical Education	Yes

As seen in Table 1, the informants in this study were teachers. Face-to-face interviews were done with 8 teaching staff members from Göynük Science High School, two of them were trainee teachers and one teacher had only one year of experience. The participants were volunteers, and there were no restrictions on the ages and seniority of teachers.

METHOD

The method of this research is qualitative study. The research is a case study with a holistic single case. Data were collected via face-to-face interviews by using semi-structured interview forms. According to Yıldırım and Şimşek (2000:19), qualitative study is a study which uses a process to present perceptions and events in a holistic and realistic way in their natural environment. Data collection methods such as observation, interviews and document analyses are used in qualitative study. The case study present results by observing them in their real context which determines the reasons and results. In qualitative research design, the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, small group behaviour, organizational and managerial processes, school performance, and interpersonal relations in real contexts (Cohen et al, 2007; Yin, 2012).

Data Collection

In order to analyse the opinions of the teachers working in the High School on informal learning regarding if they had any informal learning in school environment, which informal learning activities took place, and if this learning had a contribution to their professional development, semi-structured individual interviews were used because this would provide an in-depth exploration of the topic. It would also allow the flexibility, for example, to change the order of questions, simplify the questions, and to probe the interviews (Cohen et al, 2007). Data were collected from January 1st 2016 to January 31st 2016. Face-to-face interviews were used and informants' experiences, thoughts and feelings were recorded in a taped diary.

Data Analysis

Data analysis began with repeated readings of interview transcripts from conversations with and teachers. The purpose was to determine the essence of the phenomenon and structures of opinions of the teachers on informal learning at school environment. During data analysis, the data were organized categorically and chronologically, reviewed repeatedly and continually coded. Interview transcripts were regularly reviewed. In addition, the data analysis process was aided by the use of a qualitative data analysis computer program called NVIVO 10. These kinds of computer programmes do not actually perform the analysis but facilitate and assist it. That is to say, NVIVO 10 does not perform the analysis but only supports the researcher doing the analysis by organizing data and recodes, nodes etc. (Kelle, 1995; Cohen et al, 2007).

Ethical Considerations

Participants were briefed about the aims of the research, kept informed at all stages and offered anonymity. A consent form was signed between researcher and each participant about the use of the data in terms of how its analysis would be reported and disseminated. Care was also taken not to impose the researcher's beliefs on others since researcher's beliefs were secondary, and it was the participants thinking which was required.

Interview Process and Mapping

The purpose of this study was to analyse the opinions of the teachers who were working in a High School on informal learning at school environment. Thus the mapping of interview questions was carried out on four levels. Firstly, the teachers were asked what they understand from informal learning, secondly if they had any informal learning in school environment and which informal learning activities took place, thirdly if this learning had a contribution to their professional development, and finally what they thought of informal learning and why.

Validity and Reliability

Validity and Reliability In order to ensure the reliability and validity of the study, some steps were followed: (i) data were collected from various sources such as interviews (individual) and documents in terms of triangulation (ii) data were used as direct quotations from the interviews without making any comments on them, (iii) a purposive sampling method based on voluntarism was used in order to get the opinions and experiences of teachers on informal learning in Göynük Science High School (iv) data were coded by two independent researchers and Cohen's kappa coefficient was calculated to determine inter-rater reliability of themes coded -0.714 substantial agreement- for inner reliability (Landis & Koach, 1977) and (v) records of interviews, documents and participant observations were kept for outer reliability.

FINDINGS

In this study, the opinions of the teachers working in a Science High School on informal learning were tried to present. The opinions of teachers were classified according to their understanding of informal learning, the ways of informal learning, and its contribution to thier professional development. During the research process, participants were offered anonymity.

1. What teachers understand from informal learning

Teachers were asked about what they understood from informal learning. The data can be seen in Table 2.

Tablo 2: Understanding of informal learning

	A	B	C	D	E	F	G	H	f	%
1. Family, Environment, Outside of School				√	√	√		√	4	50,00
2. Without Program	√	√						√	3	37,50
3. Without rule			√						1	12,50
4. Spontaneous							√		1	12,50

As can be understood from the frequency analysis of the understanding of informal learning in Table 2, 50% of teachers stated that informal learning happened at family, environment, and out of school. The opinions of the participants are as follows:

Lifelong learning, different environments such as; family, community, media, outside of school. (D1,1)

Learning at school, family, street outside of school environment without an age limit. It does not include a specific age range.(E1,1)

Learning occurs out of educational institutions. (F1,1)

Informal learning happens everywhere, such as at school, environment, home as long as life goes on. (H1,1)

37,5% of teachers stated that informal learning was the learning that did not have a program. The opinions of the participants are as follows:

It is a learning type which does not have a program or an aim, in other words, without a terminal behaviour. (A1,3)

Learning situations which happen by chance without a plan or a program. (B1,3)

We can define it as learning which happens out of school by chance without a plan or a program. (H1,3)

12,5% of teachers stated that informal learning was the learning that did not have a rule and that is spontaneous. The opinions of the participants are as follows:

I think it includes all the incidents that we can come across during the life and happens anywhere outside of school without any rules. (C1,2)

Spontaneous instant learning. (G1,4)

When the opinions of the teachers on the understanding of informal learning were analyzed generally, teachers stated that it was the learning which happened outside of school without a program. Accordingly, it was understood that teachers thought that informal learning was a learning which did not have rules. It was understood that teachers mostly knew what informal learning was, and they could easily list the features of informal learning.

2. Informal Learning Activities at School Environment

Teachers were asked about which informal learning activities took place at school environment. The data can be seen in Table 3.

Table 3: Informal learning activities

	A	B	C	D	E	F	G	H	f	%
1. Talking and chatting	√	√	√		√	√	√	√	8	87,50
2. Searching on the net	√	√	√	√		√		√	6	75,00
3. Article, magazine, documentary	√					√			2	25,00
4. Observation			√	√					2	25,00
5. Observing colleagues	√							√	2	25,00
6. Television and radio	√						√		2	25,00

As can be understood from the frequency analysis of their informal learning activities in Table 3, 87,50% of teachers stated that talking and chatting was the main informal learning activity at school environment. The opinions of the participants are as follows:

For example, talking and chatting with colleagues, observing colleagues, searching on the net, via television and radio, reading papers or magazines, etc. I can update information from my students and colleagues. (A2,3)

Generally during chatting and searching on the net (B2,3)

It starts at mother's womb and continues till death. While chatting with friends, searching on the net, or observing learning or from books. (C2,3)

More or less while talking and chatting with colleagues, observing colleagues, partly searching on the net, but not from television or radio. (D2,3)

Especially on visual platform. While chatting, searching on the net, like articles, magazines, documentary channels (F2,3)

It happens while watching foreign tv series, films or talking with a foreigner. I am an English teacher, so wherever English is used, informal learning is naturally happens and reinforces. (G2,3)

As long as life goes on, informal learning happens at everywhere like school, environment, home. We can give example such as chatting at teachers' room or on the net. (H2,3)

75,00% of teachers stated that searching on the net was the main informal learning activity at school environment. The opinions of the participants are as follows:

For example, talking and chatting with colleagues, observing colleagues, searching on the net, via television and radio, reading papers or magazines, etc. I can update information from my students and colleagues. (A2,2)

Generally during chatting and searching on the net (B2,2)

While chatting with friends, searching on the net, or observing nearing or from books. (C2,2)

More or less while talking and chatting with colleagues, observing colleagues, partly searching on the net, but not from television or radio. (D2,2)

Especially on visual platform. While chatting, searching on the net, like articles, magazines, documentary channels (F2,2)

As long as life goes on, informal learning happens at everywhere like school, environment, home. We can give example such as chatting at teachers' room or on the net. (H2,2)

25,00% of teachers stated that observing, reading article, magazine, documentary, observing colleagues, watching television and listening to the radio were other informal learning activities at school environment. The opinions of the participants are as follows:

While chatting with friends, searching on the net, or observing nearing or from books. (C2,1)

More or less while talking and chatting with colleagues, observing colleagues, partly searching on the net, but not from television or radio (D2,1)

For example, talking and chatting with colleagues, observing colleagues, searching on the net, via television and radio, reading papers or magazines, etc. I can update information from my students and colleagues. (A2,4)

Especially on visual platform. While chatting, searching on the net, like articles, magazines, documentary channels (F2,4)

For example, talking and chatting with colleagues, observing colleagues, searching on the net, via television and radio, reading papers or magazines, etc. I can update information from my students and colleagues. (A2,5)

If we want to give an example to show its contribution to our profession, I can say that I update my knowledge by watching different types of teaching methods on the net, and I can use different teaching methods for different student groups. Moreover, observing also contributes to our way of teaching. (H2,5)

For example, talking and chatting with colleagues, observing colleagues, searching on the net, via television and radio, reading papers or magazines, etc. I can update information from my students and colleagues. (A2,6)

It happens while watching foreign TV series, films or talking with a foreigner. I am an English teacher, so wherever English is used, informal learning is naturally happens and reinforces. (G2,6)

When we interpret the opinions of the teachers on informal learning activities at school environment generally, teachers stated that they talked with their colleagues and searched on internet. This shows that teachers preferred listening than reading to learn something. Moreover, the results showed that teachers were internet-friendly and used technology to learn new things. One of the trainee teacher stated that observation was one type of the informal activity in school environment. Also experienced teachers found observing colleagues as a good way of informal learning which improved professional development.

3. Contribution of Informal Learning to Professional Development

Teachers were asked about the contribution of informal learning to their professional development. The data can be seen in Table 4.

Tablo 4: The contribution of informal learning to teachers' professional development

	A	B	C	D	E	F	G	H	f	%
1.Positive	√	√		√	√	√	√	√	7	87,50
2.Improving professional knowledge			√					√	2	25,00

As can be understood from the frequency analysis of the contribution of informal learning to teachers' professional development in Table 4, 87,50% of teachers stated informal learning had a positive effect on their professional development. The opinions of the participants are as follows:

It is slow and positive since it develops in its natural period (A3,2)

It has positive contribution since books do not contain every single rule (B3,2)

During my school life, I mostly learnt how to reach knowledge, rather than knowledge itself, so I can guide myself for the subject that I want to learn. In other words, informal learning is as effective as formal learning in

my life and professional development. (D3,2)

It is very useful not only for our study field but especially for general knowledge (E3,2)

It has quite positive contribution (F3,2)

Of course it has a positive contribution since it is a reinforcement (F3,2)

If we want to give an example to show its contribution to our profession, I can say that I update my knowledge by watching different types of teaching methods on the net, and I can use different teaching methods for different student groups. Moreover, observing also contributes to our way of teaching. (G3,2)

25% of teachers stated that informal learning improved their professional knowledge. The opinions of the participants are as follows:

It increases my Professional knowledge and makes my profession more meaningful (C3,1)

If we want to give an example to show its contribution to our profession, I can say that I update my knowledge by watching different types of teaching methods on the net, and I can use different teaching methods for different student groups. Moreover, observing also contributes to our way of teaching. (H3,1)

When the opinions of the teachers on the contribution of informal learning to their professional development were analysed generally, teachers stated that it had a positive effect on their professional development. However, only two teachers, one of them was a trainee teacher, stated that it improved their professional development.

4. Metaphors for Informal Learning

Metaphors formulated by the 8 participants can be categorized under four themes as in Table 5: nature, place, animal, and things. Two of the participants formulated nature metaphors in defining the informal learning. C described the informal learning as a plant: "It is like a plant. The more we give the necessary minerals, fertilizers, and nutrition to plants, the better fruits we can get". Similarly, D used a water drop metaphor for describing the informal learning: "It is like a water drop since it builds up over time with patience and determination".

Tablo 5: Metaphors for informal learning

	A	B	C	D	E	F	G	H	f	%
1 Things	√	√					√		3	37,50
2 Animal						√		√	2	25,00
3 Nature			√	√					2	25,00
4 Place					√				1	12,50

One participant formulated place metaphor in defining informal learning. E described informal learning as a place: "It is like a library. Each teacher and student are like a book about a specific subject". Two other participants used animal metaphors for informal learning. Participant F used a fish metaphor and she thought informal learning was like a fish bone: "In my opinion, formal learning was like a backbone of a fish, and informal learning was like the fish bones which forms the basis of the backbone". H described informal learning as a bee: "It is like a bee. A bee collects pollens to form the honey and makes it more delicious. Good things happen as long as people collect knowledge from everywhere." On the other hand, three participant formulated thing metaphors in defining the informal learning. A described informal learning as a butter: "In my opinion, it is like an extra butter put on rice, and it is like a flavour given to learning process from outside". B formulated a thing metaphor and she defined informal learn as a recycle bin: "It was like recycle bin, because it changes each passing day and circulates". Finally, G defined informal learning as a candle: "When a child reaches out a candle flame, he/she gets hurt. It has an effective result, so it is an exact learning".

As can be understood from the frequency analysis of metaphors defined by teachers in Table 5, the informal learning was perceived as a fruitful, effective, interesting and generally positive phenomenon.

DISCUSSION AND CONCLUSION

This study was done to understand and analyse the opinions of the teachers working in a Science High School on informal learning regarding if they had any informal learning in school environment, which informal learning activities took place, and if this learning had a contribution to their professional development. Accordingly, data were collected through semi-structured individual interviews.

Teachers defined informal learning as the learning which happened outside of school without a program and rules. According to them informal learning took place at family and social community spontaneously. When teachers opinions are generally interpreted, it could be said that their definitions are compatible with Livingstones (2001) definition: "the form of learning is informal when it is done without sustained reference to an intentionally-organized body of knowledge in more incidental and spontaneous learning situations" and OECD's (2005) definition: "informal learning is not directed by any organized or structured objectives, time or learning support". It was understood that teachers mostly knew what informal learning was, and they could easily list the features of informal learning.

The informal learning activities at school environment were talking and chatting with the colleagues, searching on internet, observing, reading article, magazine, documentary, observing colleagues, and watching television and listening to the radio. When informal learning activities at school environment are interpreted generally, it can be said that these are compatible with the findings of Nawab's (2012) study called "The Informal Learning Approaches of Teachers in a Secondary School in Pakistan". According to this study, it is stated that the most common form of informal learning in this school is observation of seniors at the time of induction.

When the opinions of teachers on the contribution of informal learnings to their professional development are interpreted generally, it can be said that these are compatible with Nishimura's (2014) study called "Effective Professional Development of Teachers: A Guide to Actualizing Inclusive Schooling". According to this study, it is stated that informal learning types such as; dialogue with colleagues and observing colleagues can be used for the professional development of teachers. The opinions of teachers on the contribution of informal learnings to their professional development are also compatible with Steward's (2014) study called "Transforming

Professional Development to Professional Learning”. According to this study, it is stated that learning from colleagues which is a kind of informal learning is an effective way of professional development. Another study which is compatible with the opinions of teachers on the contribution of informal learnings to their professional development is Giust’s (2013) study called “Increasing informal learning opportunities for teachers in the school setting”. According to this study, it is stated that although there are several potential options for administrators to eliminate barriers to informal and incidental learning in the school setting, teacher teams and e-learning are two low-cost suggestions applicable for any school. The key findings of “Scottish Teachers for a New Era” Project is also compatible with the opinions of teachers on the contribution of informal learnings to their professional development. According to the key findings, new teachers learnt informally from colleagues, peers and pupils.

Informal learning activities at school environment have great contribution to teachers’ professional development. Especially observing colleagues and talking with them is very effective on trainee teachers’ professional development. For that reason, teachers should get benefit of informal learning at school environment and this should be supported by school administration.

According to the findings of this study, the following ideas are suggested by the researcher: Teachers should be informed more about the importance of informal learning at school environment and different informal learning activities and they should be encouraged to observe their colleagues, share their experiences and talk about their study field.

Teachers should also be encouraged to use social media and internet for their professional development. They should understand the importance of networking with their colleagues from different countries and join learning communities and networks.

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