

Evaluating the Teaching Modules in Informational Technologies Field Within the Scope of Development Project of Vocational Education (DPoVE)

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Abstract: Educational programmes of all vocational high schools within the scope of the DPoVE (Development Project of Vocational Education) has been rearranged in accordance with modular educational system since the academic year 2006-2007. Ad hoc every education programme of vocational education field was rearranged and divided into lessons and lessons were divided into modules. In the end, some vocational fields were abolished and some were renamed. Within the scope of that modules of all grades' lessons were delivered by internet and lessons have been taught in accordance with these modules. There are no books available in the field of informational technology complying with the lessons content. Therefore the delivered modules have become the only available reference. The study in which the evaluation of the teaching modules is aimed with the help of the teachers' and students' opinions is in review model and designed in situational study as a qualitative research. It is implemented in information technologies lesson of 11th grade of vocational high schools. The study took place in vocational high schools in Eskisehir province at the 2007-2008 academic year.

Key words: Vocational Education • Teaching Modules • Teaching • Learning

INTRODUCTION

Vocational and technical education has taken an important place in world's leading communities. The reason for this is its being the education for bringing up qualified manpower; which refers to workers who have certain knowledge, skills and habits; in their fields required for the industry. In Turkey the vocational and technical education systems are being developed to offer more opportunities for employment in every sector of economy and to promote the quality of manpower in the country [1,2]. These efforts are highly required for competability among leading economic communities and fulfilling the compliance with vocational education systems of EU communities in the negotiation process for being a member of it.

In order to support its efforts on this matter, it is decided in 1999 Helsinki Summit that Turkey would utilize the MEDA(Euro-Mediterranean Partnership) fund that is used for the projects of Madeterranian Communities. As a result of this, Turkey has developed some project ideas

to fill the gap between industrial needs and outcome of vocational and technical education. The first step for this was taken in July 4th, 2000 with the agreement of Development Project of Vocational Education(DPoVE) between Republic of Turkey and EU. The aims of this project are:

- To promote the quality and efficiency of vocational education system through a national reform including National Quality Systems.
- To invigorate public institutions, social partners capacity of business administrations at national, regional and local level.
- To accelerate localization process of systems through including local actors in the reform implementing process.

As is seen, the purpose of DPoVE is to promote vocational and technical education to the deserved level. Actually the requirements within the scope of the project are as follows [3-6]:

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- To develop educational system and school structure that is sensitive for local needs.
- To provide the attendance of the environment.
- To develop the most efficient modular programme for determined needs.
- To bring the vocational standards into the field of education.
- To prepare reference sources such as modules, software for computer based learning etc.
- To develop Standard vocational programme in compliance with EU applications.
- To develop measurement, evaluation and accreditation systems.
- To improve the employment opportunities of the women.
- To determine local Money resources.
- To implement contemporary techniques in educational system.
- To raise the students' awareness on business life and promote creativity.
- Modular teaching is based on individual learning. Modules should provide the material that the students follow on their own and learn the subject.
- In modular teaching a student can determine his time of study on his own and he can stop studying anytime he wants and resume afterwards.
- A module should have all the contents from which a student can learn easily. Students should not feel the necessity to go to the teacher.
- A module should define the efficiency in a plain way for a student to obtain.
- In order to provide the participation of the students, listening, role playing, simulating and case study activities should be applied properly.
- All the modules of one lesson are separated but comply with each other.
- In modular teaching teacher is seen as the source.
- The contents of the modules are explained as instructions.

The modular education system was put into effect in 2006-2007 educational year as being the first implementation of the project. Ad hoc every education programme of vocational education field was rearranged and divided into lessons and lessons were divided into modules. In the end, some vocational fields were abolished and some were renamed [7,8].

Module, means structural block and assembly in the fields of production and technology. Modular production enable a unit to produce fast and affordable. In field of education a module is a unit of independent learning. It intends to provide a student with certain attributes, it demonstrates integrity in itself and it is formed with educational experience with systematic approach [9].

Modular teaching is the arrangement of teaching modules for the students to learn on their own and which have integrity in itself besides fulfilling one another [10,11]. In traditional approach contents are grouped as; subjects, units and lessons whereas in modular approach contents are grouped within the framework of the modules. Fundamental characteristics of modular teaching are as follows [9]:

- In modular teaching lesson contents are determined around the modules.
- Modules aim to give certain efficiencies to the student.
- Content of the modules take the student to a determined purpose.

The modular education system put into effect within vocational education Institutions at high school level in 2006-2007 academic year. Within the scope of that modules of all stages' lessons were delivered by internet and lessons have been taught in accordance with these modules. A printed copy of the modules were delivered to the students. There are no books available in the field of informational technology complying with the lessons content. Therefore the delivered modules have become the only available reference. This study is done by obtaining and evaluating opinions of teachers and students of informational technologies field within the scope of DPoVE.

Purpose: The aim of this study to evaluate teaching modules that are implemented in informational technology lesson of 11rd grade of the vocational high schools.

Problem Statements: The problem statements of the study for which the answers were collected in accordance with the aim are as follows:

- What are the opinions of informational technologies class teachers about purpose, content, teaching and learning process and evaluation components teaching modules ?
- What are the difficulties and general opinions of informational Technologies teachers about teaching modules?

- What are the opinions of the students who take informational Technologies lesson about teaching modules?

Importance of The Study: The purposes of the teaching modules developed within the scope of the DPoVE are to bring vocational education in compliance with the real business life, to use contemporary technologies, to raise awareness of the students about the business life and to promote their creativeness. In order to achieve the mentioned goals teaching modules should have some attributes. Teaching modules are implemented in vocational high schools for more than one year period. Therefore it can be said that the attendants have some ideas about those modules. From this point of view, the examining of teachers' and students' opinions that are arisen from the application field of teaching modules attach importance in terms of determining difficulties and shortcomings. In other words, the information of teaching modules' effectiveness would be gathered. Thus, the obtained information can be made use of in developing effectiveness. Also it is expected that the findings of this study will brighten up the future studies in which the mentioned opinions will be re examined.

Restrictions: The restrictions of the study in accordance with the aim of the study are stated below:

The study is restricted to teachers and 11th grade students of 2007-2008 spring term academic year Atatürk Endüstri Meslek ve Teknik Eğitim Lisesi, Eskişehir Ticaret Meslek Lisesi ve Eskişehir Anadolu Meslek Lisesi.

METHODS

Research Model: The study in which the evaluation of the teaching modules is aimed with the help of the teachers' and students' opinions is in review model and designed in situational study as a qualitative research. It is implemented in information technologies lesson of 11th grade of vocational high schools. In situationally designed research a phenomena is studied within its original environment [12].

Population and Sample: The population of the study is the students and teachers of the vocational high school in Eskişehir province at 2007-2008 spring term of academic year. 12 teachers who admitted to make contributions and 159 vocational high school students, to be more precise the 11th grade, are the sample of the study.

Collection of Data: Data is collected from ill-structured interview with teachers and the survey for the students. The interview form and the survey paper were developed by the researchers. Interview form has five questions in compliance with with the purpose. The survey paper has 33 questions.

Data Analysis: Two different ways are utilized in analysing the data. In analysing the data derived from interviews with teachers content analysis is conducted. According to this teachers' answers to questions related to teaching modules analyzed primarily. The validity calculation of the research is done as Miles ve Huberman (1994) proposed below. The validity of the data obtained from the interview is calculated as 89% and the study is assumed to be valid [13].

$$\text{Validity Formula} = \frac{\text{Na (Agreement)}}{\text{Na (Agreement) + Nd (Dissent)}} \times 100$$

FINDINGS AND INTERPRETATIONS

The data obtained from the study is interpreted in compliance with the array of sub purposes. According to this, teachers opinions pertaining (1) purpose, (2) content, (3) teaching-learning process, (4) evaluation process and (5) general opinions and handicaps about teaching modules are examined. The findings obtained from the instrument are demonstrated in numbers and percentages within the study.

1. Information Technology Class Teachers Opinions on Teaching Modules: The first question need to be answered is about information technology class teachers opinions on purposes, contents, teaching- learning process and evaluation elements of teaching modules.

a. Information Technology Class Teachers Opinions on Purposes of Teaching Modules: Information technology class teachers opinions on purposes of teaching modules can be seen below at Table 1.

As is seen in Table 1, among the teachers who give informational technology lessons 10 people think purposes are contemporary, 8 people think purposes are efficient, 10 people think purposes have scope, 4 people think purposes are not completed, 12 people think purposes are condensed in knowledge and comprehensive level, again 12 people think purposes are

Table 1: Teachers' Opinions on Purposes of Teaching Modules

Opinions	No. (N)
<i>Purposes are contemporary</i>	10
<i>Purposes are efficient</i>	8
<i>Purposes do not comply with students attributes</i>	12
<i>Purposes have scope</i>	10
<i>Purposes are not completed</i>	4
<i>Purposes are condensed in knowledge and comprehensive level</i>	12
<i>Purposes are not effective at practice level</i>	12
<i>Purposes comply with the contents</i>	8
<i>Purposes comply with learning and teaching processes</i>	6
<i>Purposes comply with evaluation</i>	7
<i>Purposes cannot be realized</i>	9

Table 2: Teachers' Opinions on Content of the Teaching Modules

Opinions	No. (N)
<i>Content is condense</i>	10
<i>Content is not adapted for students</i>	10
<i>Content has complicated and implicit language</i>	8
<i>Content has comprehensive language</i>	8
<i>Content have repetations</i>	6
<i>Content is efficient</i>	6
<i>Content has problems</i>	3
<i>Modules are related with each other</i>	7
<i>Modules have no connection with each other</i>	2

not effective at practice level, 8 people think purposes comply with the contents, 6 people think purposes comply with learning and teaching processes and 7 people think purposes comply with evaluation. All of the teachers think that Purposes do not comply with students attributes and a great majority of them think that it cannot be realized.

Teachers claims positive opinions on the purpose of teaching modules in general. For instance, most of the teachers think purposes are contemporary, efficient and with scope. However, there are negative opinions about purposes like, its not complying with students attributes, its not being realized and its not being completed.

b. Information Technology Class Teachers Opinions on Content of the Teaching Modules: Information technology class teachers opinions on content of teaching modules can be seen below at Table 2.

As is seen in Table 2, among the teachers who give informational technology lessons 10 people think content is condense, 10 people think content is not adapted for students, 8 people think content has complicated and implicit language, 6 people think content has repetations, 6 people think content is efficient and 3 people think content has problems. again, 7 people think modules are

Table 3: Teachers' Opinions on Teaching and Learning Process of the Teaching Modules

Opinions	No. (N)
<i>There are extra application activities in teaching and learning process</i>	4
<i>Teaching and learning process fails to meet the students needs</i>	10
<i>Teaching and learning process fails to let more application activities</i>	8
<i>There is a lack of hardware to realize teaching and learning process</i>	9
<i>Individual attributes of the students prevents student centered learning</i>	10
<i>Teachin and learning period is sufficient</i>	3
<i>Teaching and learning period is contemporary</i>	1
<i>There is a timing problem in teaching and learning process</i>	7
<i>The process fails to orientate students to PBL and CL activities</i>	11
<i>The process promotes critical thinking, questioning and research skills</i>	11

related with each other and 2 people think modules have no connection with each other.

As a result some teachers have positive opinions and some have negative. According to most teachers attendance of different participants in planning stage of the modules hinders the plain and comprehensive language and the unity in writing. On the other hand some teachers think that modules have connection with each other and content is efficient.

c. Information Technology Class Teachers Opinions on Teaching and Learning Process of the Teaching Modules: Information technology class teachers opinions on teaching and learning process of teaching modules can be seen below at Table 3.

As is seen in Table 3, among the teachers who give informational technology lessons 4 people think there are extra application activities in teaching and learning process, 10 people think teaching and learning process fails to meet the students needs, 8 people think teaching and learning process fails to let more application activities, 10 people think Individual attributes of the students prevents student centered learning, 3 people think teaching and learning period is sufficient, 1 person thinks teaching and learning period is contemporary, 7 people think there is a timing problem in teaching and learning process, 11 people think the process fails to orientate students to pbl and cl activities and again 11 people think the process promotes critical thinking, questioning and research skills.

According to the findings it can be inferred that teachers have negative opinions on teaching and learning

Table 4: Teachers' Opinions on Evaluation Process of the Teaching Modules

Opinions	No. (N)
<i>Evaluation questions are profitable for teachers and students</i>	8
<i>Evaluation questions are good for developing</i>	6
<i>Evaluation questions are not efficient</i>	4
<i>Evaluation questions makes students memorize the items</i>	3
<i>Evaluation section arranged swiftly and incompletely</i>	4
<i>Evaluation section provides feedback for the student</i>	6
<i>Evaluation sections facilitate the readiness for the exams</i>	4
<i>Evaluation sections are utilized by teachers</i>	10
<i>Evaluation section is efficient</i>	8

process of the teaching modules. Especially, Teaching and learning process failure to meet the students needs, teaching and learning process failure to let more application activities, the lack of hardware to realize teaching and learning process, Individual attributes prevention of student centered learning are among these.

d. Information Technology Class Teachers Opinions on Evaluation Process of the Teaching Modules: Information technology class teachers opinions on evaluation process of teaching modules can be seen below at Table 4.

As is seen in Table 4, among the teachers who give informational technology lessons 8 people think evaluation questions are profitable for teachers and students, 6 people think evaluation questions are good for developing, 4 people think evaluation questions are not efficient, 3 people think evaluation questions makes students memorize the items, 4 people think evaluation section arranged swiftly and incomplete, 6 people think evaluation section provides feedback for the student, 4 people think evaluation sections facilitate the readiness for the exams, 10 people think evaluation sections are utilized by teachers and 8 people think evaluation section is efficient.

Most of the teachers have positive opinion about evaluation section. Especially, evaluation questions' being profitable for teachers and students, their being good for developing, evaluation sections' being utilized by teachers evaluation section's being efficient are some of those. On the other hand evaluation questions' being not efficient and evaluation section' being arranged swiftly and incompletely are the negative opinions.

2. Information Technology Class Teachers General Opinions of the Teaching Modules and the Difficulties They Experience: The second question of the study is about general opinions of the teachers and the difficulties they experience during implementation. The opinions of the teachers who give informational technologies lesson can be seen at Table 5 below:

Table 5: Teachers' General Opinions of the Teaching Modules and the Difficulties They Experience

General Opinions	No. (N)
<i>Teaching modules prove to be successful</i>	7
<i>Teaching modules bring contribution to vocational education</i>	4
<i>The people who partipate planning phase of the modules should be effcient</i>	8
<i>Teaching modules should be reviewed by programme developping expert</i>	6
<i>Teaching modules should be established with team work</i>	8
<i>In planning teaching modules a definite format can be preferred</i>	6
<i>Teaching modules are rearranged according to students' profile</i>	5
<i>The quality of students attending vocational education are gradually increasing</i>	9
<i>Teaching modules should be supported with more visual sources</i>	6
<i>Teaching modules implementation is more important than theoretical basis of it.</i>	10
Handicaps	
<i>Teaching modules are planned and implemented hasty</i>	6
<i>There are unsufficient physical basis for teaching modules</i>	9
<i>Constituted pilot schemes are not enough for the implementation of the teaching modules</i>	3
<i>Students who continue vocational education lose the enthusiasm and desire to learn</i>	10
<i>Teaching modules are seperated</i>	9

As is seen in Table 5, two main subjects of teachers general opinions and handicaps have put on the ground. according to table among the teachers 7 people think teaching modules prove to be successful, 4 people think teaching modules bring contribution to vocational education, 8 people think the people who partipate planning phase of the modules should be effcient, 6 people think teaching modules should be reviewed by programme developping expert, 8 people think teaching modules should be established with team work, 6 people think In planning teaching modules a definite format can be preferred, 5 people think teaching modules are rearranged according to students' profile, 9 people think the quality of students attending vocational education are gradually increasing, 6 people think teaching modules should be supported with more visual sources and 10 people think teaching modules implementation is more important than theoretical basis of it.

Along with these general opinions, teachers explain the difficulties they have been through. Among the teachers, 6 people think teaching modules are planned and implemented hasty, 9 people think there are unsufficient physical basis for teaching modules, 3 people think constituted npilot schemes are not enough for the implementation of the teaching modules, 10 people think students who continue vocational education lose the

Table 6: Students' Opinions About Teaching Modules (N=159)

Opinions	Strongly Agree		Agree		Neither Agree nor Disagree		Disagree		Total	
	No. (N)	Percentage (%)	No. (N)	Percentage (%)	No. (N)	Percentage (%)	No. (N)	Percentage (%)	No. (N)	Percentage (%)
1. Every teaching module has purpose section	120	75.47	23	14.47	13	8.18	3	1.89	159	100
2. Every teaching module has research section	95	59.75	29	18.24	21	13.21	14	8.81	159	100
3. Every teaching module has lecture section	123	77.36	7	4.40	23	14.47	6	3.77	159	100
4. Every teaching module has implementing activity section for each subject	114	71.70	10	6.29	13	8.18	23	14.47	159	100
5. Every teaching module has assessing and evaluating section for each subject	137	86.16	13	8.18	4	2.52	5	3.14	159	100
6. Every teaching module has a reference section	71	44.65	30	18.87	35	22.01	23	14.47	159	100
7. I find the language of the module as being plain and comprehensive	51	32.08	61	38.36	3	1.89	44	27.67	159	100
8. Content of the teaching modules is supported by visual elements	98	61.64	44	27.67	4	2.52	13	8.18	159	100
9. Content of the teaching modules has integrity in itself.	74	46.54	42	26.42	30	18.87	13	8.18	159	100
10. Content of the teaching modules is efficient from actuality point of view.	62	38.99	30	18.87	37	23.27	30	18.87	159	100
11. Content of the teaching modules is appropriate for the students knowledge level.	69	43.40	41	25.79	12	7.55	37	23.27	159	100
12. Content of the teaching modules meets students expectations	49	30.82	62	38.99	7	4.40	41	25.79	159	100
13. Applications of teaching module mostly cover the subject	89	55.97	33	20.75	19	11.95	18	11.32	159	100
14. Applications of teaching module are applicable within the existing possibilities	75	47.17	33	20.75	12	7.55	39	24.53	159	100
15. Applications of teaching module make efficient contribution to the development of the field.	68	42.77	44	27.67	22	13.84	25	15.72	159	100
16. Fullfilling the application of teaching moduls makes affirmative contribution to the grades.	87	54.72	32	20.13	17	10.69	23	14.47	159	100
17. Applications of teaching modules are properly identified	63	39.62	42	26.42	19	11.95	35	22.01	159	100
18. The evaluation questions in teaching modules make spositive contribution to the field.	66	41.51	41	25.79	7	4.40	45	28.30	159	100
19. The reference sections of the modules are efficient	42	26.42	35	22.01	48	30.19	34	21.38	159	100
20. All teaching modules of one lesson are related to one another.	77	48.43	39	24.53	16	10.06	27	16.98	159	100
21. The implementation of the modules can be realized even if there was only one module remained.	42	26.42	29	18.24	34	21.38	54	33.96	159	100
22. Teaching modules are supported with visual sources	30	18.87	15	9.43	12	7.55	102	64.15	159	100
23. Teaching modules are more effective than books	78	49.06	31	19.50	22	13.84	28	17.61	159	100
24. Teaching modules are more effective than internet research	51	32.08	28	17.61	24	15.09	56	35.22	159	100
25. Teaching modules are more effective than lecturing	31	19.50	29	18.24	10	6.29	89	55.97	159	100
26. Ateacher is required in studying with teaching modules	81	50.94	28	17.61	6	3.77	44	27.67	159	100
27. Studying with teaching modules is interesting	46	28.93	46	28.93	11	6.92	56	35.22	159	100
28. Studying with teaching modules facilitates learning	82	51.57	54	33.96	6	3.77	17	10.69	159	100
29. Teaching modules broden a student's horizon in the field	66	41.51	48	30.19	12	7.55	33	20.75	159	100
30. Teaching modules help to develop questioning skills of a student	60	37.74	44	27.67	18	11.32	37	23.27	159	100
31. Teaching modules help to develop discussion skill of a student	55	34.59	41	25.79	16	10.06	47	29.56	159	100
32. There are some difficulties in studying teaching modules	52	32.70	48	30.19	11	6.92	48	30.19	159	100
33. Other (your other opinion will highly be appreciated)										

enthusiasm and desire to learn and 9 people think teaching modules are separated

According to the findings, it can be inferred that teachers put forward opinions about promoting the quality of the teaching modules. There are *teaching modules' being established with team work, teaching modules' being rearranged according to students' profiles* and *teaching modules' being supported with more visual sources* among those opinions. Along with this, handicaps about teaching modules are seen on the table. There are hasty implementation of teaching modules, inefficient implementation of pilot schemes and unconnectedness of teaching modules among teachers perceptions as handicaps.

3. Students Opinions About Teaching Modules: The last question of the study is about students opinions about teaching modules are demonstrated in Table 6 below:

As is seen in Table 6 most of the students have positive opinions on teaching modules. A great majority of the students indicate positive opinions on teaching modules' having a purpose section (75%), a research section (59.75%), lecturing section (77.36%), implementation activity section (71.70%), evaluating section (86.80%), further readings and references section (44.65%). Again, supporting of teaching modules with visual elements (61.64%), content's having integrity in itself (46.54%), evaluation section's having positive contribution on student's development (41.51%), teaching modules' being related to one another (48.43%), Teaching modules' being more effective than books (49.6%), requiring a teacher when studying with teaching modules (50.94%) and its facilitating the learning (51.57%) are the other parts of the positively declared opinions.

There are some studies supporting the findings in this study. For instance, Sert [14] came up with with a result that most of the students consider mentioned moduls as being effective and contribute their development process. [14]. Again, Gömleksiz [15] figured out that most of the students of vocational education faculty took in the english lesson module and wanted it be spread out [15].

Considering the results, students have positive opinions as well as "neither agree nor disagree" opinion. This can be considerate. Especially positive opinions' being close to the negative ones can be the very evidence for this. It can be perceieved normal because the teaching module application is an emerging promising project.

CONCLUSIONS AND RECOMMENDATIONS

It can be concluded from the study that teachers and students have positive and negative opinions teaching modules of informational technologies. But the implementation of the modules are generally perceived as acceptable. This study reveals that modular teaching is a promising project for the future of vocational education in Turkey.

Following recommendations can be proposed in order to promote the scope of the project and get rid of the side effects of the implementations :

- Teaching modules can be prepared with a team. The important criteria for the team members would be their being efficient and prevailing literature.
- Activities should be implemented instead of theoretical knowledge within the content of the modules.
- Students awareness should be hightened of teaching modules.
- Teaching modules should be provided with the activities represent the real business life.
- Physical construction of the school should be taken into consideration in popularizing theteaching modules.
- The activities that develop the reading, research and questioning skills should be implemented more often for the student educated with teaching modules.
- The expected and desired development in vocational education shouldn't be attributed only to teaching modules; the activities between vocational education institutions and real business life should be coordinated as well.

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