

# Teachers Perceptions towards Modules Used in Vocational and Technical Education

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**Abstract** This paper is a situational research aiming at determining teachers' perceptions with regard to Modules Used in Vocational and Technical Education. The data were collected from 12 teachers via semi-structured interview method. Context analysis is applied for the data. According to the data, teachers have positive ideas in some main points with regard to the modules, but they stated that there were very important problems in the process of their application. There are two main reasons for these problems. First, modules were not prepared by specialist and they were very far from real business life. Teachers' perceptions towards modules are not different from each other in three different institutions.

**Keywords:** SVET, vocational education, modular education, module, technical education, teachers perceptions

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## 1. Introduction

In our age in which technology and industry show a rapid development, it is a fact that this change has significantly affected education functionally and structurally. It is a natural consequence of the initiatives of the use of technology, modernization and industrialization of societies. From this perspective, it can be said that the rapid development of technology and industry has closely influenced particularly technical and vocational education.

The project of strengthening the system of vocational education and training in Turkey (SVET) which is supported by the European Commission and aims to strengthen the vocational education and training system accordance with the principles of the socio-economic needs and lifelong learning has been implemented in stages at all vocational and technical education institutions starting from the academic year 2005-2006. With the realization of the SVET project, modules which aim to provide vocational qualifications have been developed to be used as teaching material [1].

The module consists of teaching experiences having a beginning and an end, based on individual teaching, demonstrating integrity in itself, coordinated within a systematic framework and follows a specific order. Knowledge and skills are provided for at least one qualification through each module [1,2].

It is essential that the introduction part that contains general introductory information of a module should include an assessment method that will demonstrate to what extent objectives were achieved by behavioural

objectives, materials and learning activities to be realized [3,4,5,6].

The sections of modules prepared under SVET are in teacher's guide book; table of contents, descriptions, introduction, learning activities (purpose, research, information issues, applications), assessment and evaluation (objective tests, practical tests, practice evaluation), the module evaluation (objective tests, performance tests and evaluation), answer keys, recommended resources are expressed in the form of references [1].

Description part is on the top of the module. This section is important in terms of its functions such as introduction of the module, the guidance of the users and providing motivation. The aim of description part is to draw attention to the subject by giving general information about the module, information on how students should work by emphasizing the significance of the module, and points related to the module [3]. In the description part of modules prepared under SVET; there are general information (code, area, branch / occupation, name of the module), module description, duration, prerequisite learning, proficiency, purpose of the module, education and training environments and equipments, and information on the assessment and evaluation [7].

In introduction, there are explanations for students and these explanations aim to motivate students for module. Introduction should provide information on the importance of module in field- profession and the use of gains in professional skills and on everyday life [8].

The Part of learning activities should include the activities organized to achieve the goals set out at the beginning of the module and equipments to be utilized [5]. In this section, information and applications must be

presented in a clear, understandable way. Text portions should be supported by pictures, charts and graphs, and pictures, charts and graphics should be referred to in narrative parts. Information The information given on the information should consist of information that will support the application activities [3-8]. The part of learning activities of the modules prepared under SVET contains purpose, research, the contents of learning activities and the application part.

In the part of assessment and evaluation, there are assessment and evaluation tools by which students evaluate themselves at the end of each activity to take necessary measures by determining the attainment levels to the objectives of learning activities during the process of learning and teaching. The evaluation tools in question are objective and applied tests according to the characteristics of behaviour to be measured [8]. Techniques can be employed such as tests including self- evaluation, teacher evaluation observation forms, student evaluation report, multiple choices, true-false, matching, completion question types. The individual's own self-assessment, teacher observation forms to be followed by the assessment of the students will be taken during the event, the assessment reports, multiple choice, true-false, matching, such techniques can be applied to complete the evaluation tests of question types [1,2,3].

In addition to the features described above, it is considered beneficial to include a visually striking designed cover page and information on module (name, year of publication, location, etc.) as well as a small survey for the views of students about module [3]. Moreover, a module should have the feature of compliance with the objectives, accuracy, precision and reliability in knowledge, attractiveness, technical competence, promoting, effectiveness, compliance with student, usability, usability individually and in a group, compliance with cognitive, affective and psychomotor behaviours [9].

As the modular system is economical, cover broad masses socially, meet individual requirements; respond to regional differences, and is applicable by local authorities and all parties, it makes modular teaching approach indispensable for vocational training and practical training courses. Although modules are materials based on individual training, teachers play an active role during practices. Teachers play an active role in the preparation of the modules, the determination of periods, the planning of activities inside and outside the classroom, the implementation and evaluation of activities. That teachers help students especially during the use of modules increases the success [10].

The aim of this study is to determine teachers' views towards modules used as education-teaching material in vocational- technique education. In accordance with general purpose, answers were sought to the following questions:

1. What are the views of teachers towards the modules used in technical and vocational education?
2. What are the problems teachers encounter on the implementation of the modules used in vocational and technical education?
3. What are the recommendations of teachers for the modules used in technical and vocational education?

## 2. Method

### 2.1. Model of the Study

In this study, case study, one of qualitative research methods, was used. The key feature of the case study was to survey one or a few case in depth. That is, factors of a situation (environment, individuals, events, processes, etc.) are studied by holistic approach and focus on how they affect the related case and how they are affected by related case [11].

### 2.2. Working Group

The research was carried out with the participation of a total of 12 teachers working at 3 vocational and technical High School in the academic year 2012-2013 in the district of Bursa Province Mustafakemalpaşa, There were 8 male and 4 female participants. The participants were from different fields on a voluntary basis.

Table 1. Distribution of respondents according to schools

Type of School	Participant Code	Number of participants
Technical and Industrial Vocational High School	EML-(1,2,3,4)	4
Technical and Vocational High school of Girls	KML-(1,2,3,4)	4
Trade School	TCL -(1,2,3,4)	4
<b>TOTAL</b>		12

### 2.3. Development of Data Collection Instrument and Data Collection

Semi-structured interview technique was used in this study as a method of data collection. As semi-structured interview technique allows data collection by open-ended questions rather than closed-ended questions, it shows the quality of a flexible guide during the interview and provides focus on the subject and help take in-depth knowledge about the participants [12].

In the preparation of Interview forms, the opinions of teachers were consulted and literature related to the subject was surveyed. The draft interview form reviewed by members of the faculty in the field of educational sciences was finalized in line with comments and suggestions. The interview form consists of 10 open-ended questions. During the interview, participants were asked probing questions as needed. Face-to-face interviews with participants were recorded by audio recording device with the approval of the participants. After the interviews, the recorded data was converted to text.

### 2.4. Validity and Reliability

The themes in the content analysis made to increase the internal validity of the study were tried to be as broad enough to include the related concepts. All of the findings were directly presented without comment to improve the internal reliability of the data and the other researchers were involved in the process of analysis of data. To enhance the external reliability and external validity of the study, research process and those made in this process were tried to be explained in detail. In this regard, the model of the research, the data collection process, analysis and interpretation of data were described in detail. Also,

the raw data obtained and codes are stored for others to review.

## 2.5. Analysis and Interpretation of Data

The data obtained were subjected to content analysis. The main objective in content analysis is to achieve the concepts and relationships to explain the collected data. Data are defined through the content analysis; facts that may be stored in data are brought out. The main process in content analysis is to bring together data similar to each other within the framework of specific concepts and themes and interpret them by organizing in a way that readers can understand [12].

In this study, in the process of data analysis, these steps were followed: 1 - Data Coding: interview data were examined and the general framework of coding list was established. 2 - Finding themes: it was decided which codes can provide a combination in order that they could make a convenience in data classification and finding themes. Thus, codes were brought together and meaningful relationships between them were established. 3 - Regulation of codes and themes: The codes and themes were arranged. Data united under the same code or theme were associated with sub-problems the theme. 4 - The identification and interpretation of the findings: Descriptions for themes to each sub-problem theme were made and findings were interpreted with the support of direct quotations.

## 3. Findings

### 3.1. Findings Related to the Views of Teachers towards Modules Used in Vocational and Technical Education

When the overall assessment of the participants on explanations part in the module was examined, it can be seen that they are of the opinion that the explanations are clear, functional, necessary and sufficient.

"... a language that both the student and the teacher can easily understand. In terms of language, I do not see a problem for the usability of the words ..." (TCL-1)

While some of the participants are of the opinion that time for the module is sufficient, while other participants say that time is much more for some modules and insufficient for some.

"... Some of our modules are adequate, but there is much time in some of our modules. The number of modules is not adequate but there is too much time while in others there is less time..." (CML-1)

All of the teachers are of the opinion that the objectives in the part of explanations are suitable, clear, understandable for developmental feature of students and special objectives are consistent with general objectives.

"... Yes, clear and understandable. So they are applicable. Short and descriptive sentences are already used. I think it can be carried out when we have a lecture or make the orientation of the course in accordance with the sentences and explanations..." (EML-2)

It is seen that teachers are of the opinion that recommended environment and hardware are consistent with the objectives and applicable when the views of the

participant teachers towards educational environments and equipments in the part of explanations are studied.

"... I think they are prepared in a way that they overlap with each other already. There is not a shortage. But somewhere, for example, we always tell the same, if there is something, if there is impossibility or lack of material, we can't realize any of them from the beginning already..." (EML-3)

Vast majority of participants are of the opinion that the part of introduction is clear, understandable qualified enough to guide students and appropriate for their levels.

"... The part of introduction is necessary in terms of providing the necessary start-up information on the subject as in the part of explanation. In general, language in modules is understandable... a language that students read without having any difficulty or getting bored so I do not see any problem ..." (CML-3)

The teachers in the study group are of the opinion that preliminary research proposed in teaching-learning activities in module are appropriate to the level of students as well as cost and time, and in a consistent with objectives and can be performed.

"... when I look through the explanation here, I consider and observe that our students can easily do and it is prepared in a way that it won't pose any financial burden on our students. There is no problem in understanding. It is easily understood. It is suitable for high school students..." (EML-1)

On the other hand, as an analysis of views towards the content of the teaching-learning activities, the content is coherent with objectives, according to the level of students, clear and understandable and is considered to be scientifically accurate and up to date.

"... It is good as a language. I mean, there are no very complex sentences. I think coherence at level of students is normal. It is fine, so I cannot say anything negative ..." (EML-5)

As an analysis of views towards the proposed practices in teaching-learning activities, participants agree with the opinion that they are coherent with objectives, appropriate for student level, and cost-effective, sufficient in terms of time and functional.

"... It is well-chosen. It is really nicely prepared as they are more and more challenging applications such as on-stage level; for example, the applications at the end of the module, and in the subject. It is suitable for student level. Students are not imposed to severe stress as it goes from simple to hard..." (TCL-4)

The vast majority of participants agree with the opinion that the proposed evaluation and assessment tools in module are easily applicable and sufficient in scope.

"... It is easy. Sometimes we encounter questions that contrast with each other. For example, here is a question, answer of which is given as a question in the other. I think that the evaluation should not be this way. I take advantage of all ..." (CML-3)

### 3.2. Findings Related to the Problems Teachers Encounter on the Implementation of the Modules Used in Vocational and Technical Education

As an analysis of participants' views towards the implementation of the part of explanation in module, it is

seen that they agree on the idea that explanations are not used by students, do not guide students, insufficient and hard to follow up.

"... We read the descriptions at first, but I do not think many students consider it much ..." (TCL-1)

"... Students have had the habit to skip the explanation part and directly start from the introduction part..." (EML-3)

"... Students do not look too much here, but it is written in an understandable language and it can guide students and teachers ..." (CML-2)

Some of the participants state that there is insufficient time for module in the implementation of it. In addition, participants express that periods of extra-curricular proposed in module cannot be used and followed up.

"... In every classroom I am in different. Part. . In one part, I am a week ahead. In another, I am one week back. Some modules differ according to the students of the class and according to their ability. In some of the courses, the given period of time can be inadequate for that module..." (TCL-1)

"... We have practical courses, but after dealing with a subject, I do not think we can make it applicable outside. On the other hand, we cannot follow the work outside. ..." (EML-3)

Teachers state the problems concerning the objectives of the implementation process as the lack of the level of students' readiness, time and the learning environment. Moreover, the objectives are far away from work life.

"... Of course, we have a problem with the period of time and the problem of time arises. For example, the button buttonhole camera should be used by everyone. There is a shortfall of equipments in these matters. That is the Low level of the student. General problem of vocational high schools is the lack of interest. That is the decrease in the level and the reluctance of the student ..." (CML-1)

When the views of participants towards educational environments and equipments on the problems of the implementation of module are examined, it is seen that they agree with the opinion that there are insufficiency in terms of equipment and disconnection from work life.

"... We can deal with 80% of the subjects, but we cannot deal with 20% of subjects due to lack of equipment. There are also subjects remaining in a level of information. That is, if you can tell the module through full equipment, you can teach the students and allow them apply it. However, students experience completely different machines and measurements at workplace. For example, you have them weighed 5 g and you teach them in this way..." (CML-2)

The vast majority of teachers emphasize the problems on the introduction part in the process of implementation as not using the part of introduction and not being able to draw interest.

"... We want to start our subject in an anxiety to finish the modules as soon as possible, and do not refer to this section. In addition, even when it is in plaintext, it is not attractive..." (CML-4)

"... Students do not take into account much more. So any students has not returned saying that he or she read the introduction..." (EML-2)

It is seen that teachers in the study group differently express the problems involved in the process of the

realization of preliminary studies in teaching-learning activities in module. Among these, inability to draw the attention of student, the low realization rate, high cost, lack of environmental opportunities and time, disconnection of work life and difficulty in following come forward.

"... The time is not enough. Environmental facilities are insufficient. We live in the district. It is not a very well-equipped place. So, for example, sometimes we cannot find a pen that we look for ..." (CML-4)

"... But as a result of this learning activity, students themselves obviously cannot make the assessment of the application of this work..." (EML-1)

It is seen that teachers' views are diversifying on the problems in the process of implementation of the content of teaching-learning activities. The main problems in this area are scientific error, not being up to date, poor quality in printing, unnecessary detail, not being original, and misspellings, being too morbid and inadequacy visually.

"... In general, except for the period, the part in the modules, are processed disconnected from each other. For example, what have we dealt with in computerized accounting module? We have dealt with current accounts. After this subject, so many subjects have been dealt. . For example; accounting receipts. When passing to another part, as if we had never dealt with the accounting receipts, we start from the very beginning and the subject is told to the student..." (TCL-4)

"... There is not a very specific content..." (CML-2)

When the findings concerning the problems in the process of the realization of the practices in learning-teaching activities are examined, it is seen that participants' views are diversifying and state that there is lack of environment, equipment and time, superficiality, and the high cost.

"... If there is the impossibility in question, if there is the impossibility of workshop, this is biggest problem in terms of the material. Another can not be a nuisance anyway ..." (EML-3)

"... There are not enough subjects for applications, I mean in the modules. Just a few simple application examples are given. There is no sample in the applications but the titles of the topics. These sources will be made, these processes will be made. Is there anything else? There is nothing else. Which application will be made is not available in the module..." (EML-4)

The vast majority of participants agree with the opinion that there are certain problems such as lack of environment in evaluation and assessment practices, and inability to make a self-assessment and performance evaluation.

"... but some of the modules do not cover all learning activities in assessment and evaluation questions.... Let alone the evaluation of learning ... It is unfortunately we do not have a student profile ..." (EML-1)

### 3.3. The Recommendations of Teachers Concerning Modules Used at Vocational and Technical Education

When the recommendations of participants concerning the part of explanations are generally examined, it is seen that they agree on the opinion that the explanations should be clearly written by experts.

"... I want it to be prepared by the instructors at the university. So there can be a little more informative and consolidating explanations. One explanation may be the result of research ..." (EML-4)

On the duration of the module, Participants recommend that class hours should be increased, and the duration of the module should be arranged in accordance with the school-industry cooperation.

"... I think the solution here is to survey and increase the class hours so that they can get to know their profession environment. Of course, it is necessary that school and the profession should be compatible with the environment ..." (EML-5)

The participating teachers are of the opinion that the views of teachers towards the explanations should be taken and teachers should inform the students about the purposes of the modules.

"... Teachers should give the students the habit of reading. . Also, by taking the views of teachers, the part of explanation should be conformed to the level of students..." (TCL-4)

When the participants' recommendations towards educational environment and equipments are examined, it is seen that they agree with the opinion that the school environments should be developed in terms of equipment, the visual materials should be used, and the environment should be in compatible with the business life.

"... That the teacher use materials more (TV, VCD, computer, etc.) allow the students have an optimistic atmosphere to the profession, and they become more interested in ..." (TCL-1)

"... Graduates from different universities must come together. Only teachers would not be enough. I think academics should be a participant..." (CML-4)

On the recommendations of the part of introduction, the vast majority of teachers are of the opinion that this part should be supported by pictures and visuals, be prepared by experts, be made in the future and should include significant elements.

"... People who have been trained in this field may perform this work. Perhaps, it would be much better. What can arouse students' attention? So, especially coloured images provide much benefit, I mean, there is much difference between a Coloured book and colourless black and white book ..." (EML-3)

On the preliminary studies in the teaching-learning activities, teachers state that they should include more sample applications and be adapted to the business life.

"... I believe that in preparing the module, it would be better to have a sample of them on the page..." (EML-4)

"... especially on regional basis, there are a lot of activities to be carried out, of course, there is a union in education. This is not something easy to ..." (TCL-3)

When the recommendations regarding the content of the teaching-learning activities is analyzed, it is seen that certain recommendations are expressed as follows: it should be updated, be adapted scientifically, have an increased print quality, be purified from detail information, written by experienced teachers and experts, be supported by remarkable elements.

"... When the module was first introduced, it was very feasible. However, our profession is very dynamic. Therefore, the content should be revised and renewed. We encounter very deep-rooted and very basic errors. So the

content of the modules should scientifically be examined again ..." (EML-1)

On the applications concerning teaching-learning activities, participants agree with the opinion that there should be implementation activities taking the expectations of work life into account, implementation activities should be enriched and be detailed, and they should be prepared by experienced teachers and experts.

"... It is essential that applications are needed to be chosen in accordance with today's technology and innovations. Those who prepared this module should visit the enterprises to see the current practices. And they should put these applications into the modules by obtaining information about them ..." (EML-4)

On the evaluation and assessment tools, the vast majority of participants recommend that teachers should establish question banks, suitable environment should be provided for evaluation process, and the examples for different types of questions should be included in the module.

"... Teachers can make up evaluation - assessment questions through the modules and introduce sample test. These tests are submitted to the centre. The commissions to be created in the centre can prepare the assessment tests for the following year and question banks can be made available to all teachers ..." (EML-1).

#### 4. Conclusions and Recommendations

In this study carried out to determine the views of teachers towards modules used as educational material in vocational and technical education, the following conclusions were reached:

On the part of explanation of modules used in vocational and technique education, teachers state that modules are clear, functional, necessary and sufficient. On the other hand, they also state the problem that the part of explanation is not used by student, do not guide students and is too hard to follow. So they recommend that the part of explanations should be clearly written by experts to solve out these problems. While teachers disagree on the evaluation of the time allocated for the modules, while they agree on the problems that there is insufficient time, extra-curricular periods cannot be used, and they are hard to follow. In order to solve the problems mentioned above, they suggest that, modules in the course bourses should be increased and period on modules should be regulated in cooperation with school-industry. While goal statements in the part of explanations are appropriate for developmental characteristics of students, clear, understandable and consistent with the general objectives, there are problems related to lack of students' readiness levels and environment and disconnection from business life. In order to solve these problems, teachers propose that their views are to be taken in writing module and students are to be informed about aims of the module. The conclusion, in a study conducted by Seçilmiş and Ünlüönen [13], in which teachers who participated in the survey agree with the opinion that overall aims and objectives were clearly stated and clear and understandable, show consistency with this study. As the environment and the equipments in the module are evaluated by teachers as consistent with the objectives and applicable, lack of schools in terms of

equipment and disconnection from business life are designated as the main problems at this point. About the solution, it is proposed that school environments in terms of equipments be developed, visual materials be used, and the environment should be compatible with business life. Also, in a study conducted by Gök [14], similar conclusions regarding equipment deficiency at school environments were achieved, teachers who participated in the survey agreed with the opinion that the existing equipment of schools are not sufficient for the implementation of modules. Similar results were also introduced in a study conducted by Adigüzel and Berk [15], participants in this study emphasized the inadequacy of the existing equipments in vocational and technical education institutions and stated the need of additional equipments for implementation of modular education programs effectively.

The part of introduction of modules was interpreted by teachers as clear, understandable and in a way to guide students in accordance with the level of the students. As the issues relating to this section are disuse and inability to attract interest, recommendations should be prepared by experts, used in the future and include remarkable elements.

As Preliminary research proposed in learning activities on the module is evaluated as suitable for the student level, appropriate in terms of cost and time, consistent with objectives and achievable; inability to draw attention, the low realization rate, high cost, lack of time and environmental opportunities, disconnection from business life, work life, difficulty in follow-up are stated as problems. In order to solve these problems, teachers list their recommendations as follows: more sample applications should include and be adapted to work life. Teachers stated that the content of learning activities were compatible with the objectives, suitable for the student level, clear and understandable, scientifically accurate and up to date. On the other hand, certain problems are indicated such as the presence of the scientific error, not being up to date, poor quality in printing, unnecessary detail, not being original, spelling errors, being comorbid and insufficiency visually. Recommendations to overcome these problems are listed as follows: Updating of content, optimizing scientifically, improving the quality of printing, purification from detailed knowledge, written by experienced teachers and experts, supporting by attractive elements. These results achieved significantly show consistency with the results achieved in a study conducted by Seçilmiş and Ünlüönen [13]. About the applications proposed in learning activities, teachers are of the opinion that they are compatible with the objectives, suitable in terms of the student level, and cost-effective, adequate in terms of time, and functional. However, they state the problems such as lack of environment, equipment and time and superficiality and high cost. Recommendations on these issues are expressed in this way: the implementation of activities should be enriched in a way to meet the expectations of business life and be detailed, prepared by experienced teachers and experts. In a study conducted by Dursun [16], it was found out that the participating teachers are neutral about the providing opportunity to practice of SVET project in enterprises to students and the increase school-industry relationships. Also, in a study conducted by Gök [14], conclusions that support these findings were achieved, and it was found that participants

disagreed on the opinion that experts took part in the writing of the modules. Similar results were also achieved in a study conducted by Ünlüönen and Seçilmiş [13], and it was determined that the most significant difficulty is that people who wrote the modules don not have knowledge and experience in this regard.

Assessment and evaluation tools proposed in Modules are considered by teachers as easily applicable, and adequate in terms of content. On the other hand, lack of environment, self-assessment and failure of performance evaluation are stated as problems. Teachers list their recommendations regarding assessment and evaluation tools; question banks should be established, a suitable environment should be provided to evaluation process, examples for different types of questions should be included in the module. Similar conclusions about the lack of assessment and evaluation tools were achieved in a study conducted by Seçilmiş and Ünlüönen [13].

As an analysis of research in related literature on the assessment of the modules, it is seen that participants are of negative views on modules in general [17,18]. It can be said that there is a significant consistency between the results obtained in studies in related literature and the results obtained in this study.

When the findings of the study are analyzed in general, although modules, prepared to be used as teaching material at vocational and technical education institutions, are evaluated by teachers as positive with certain aspects as draft, it was discovered that there were significant problems in the implementation process. It was determined that the two main sources of these problems were that modules are disconnected from business life, and not written by experts. In addition, based on the findings of this study, it can be said that the views towards recommendations for modules and the problems encountered in the process of implementation of modules, on the evaluation of the modules do not differ significantly in terms of teachers institution, and there is a similarity between the views of teachers who work in different three institutions.

Developed recommendations on the basis of the results achieved are listed below;

1. Modules are to be written by expert individuals,
2. Modules are to be improved in a qualified way to prepare students for their lives of future business,
3. Modules are to be prepared to support students' lifelong learning,
4. The content of the modules are to be clear, understandable and scientifically updated,
5. The expectations of the industry are to be taken into account in the preparation of modules,
6. School environments are to be supported by applicable equipments effectively,
7. Modules are to be supported with visual elements,
8. Revisions are to be made by taking feedbacks about the proposed time and subjects for modules.

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