A Strategic Decision Model Proposal for Open and Distance Flexible Technology-Enabled Learning Environments

*Emel Guler**
*Buket Karatop***
*Gülsün Kurubacak****
*Ramesh Chander Sharma*****

Abstract

Open and distance flexible learning is a strategic issue since it means making the criteria of learning flexible by using technology to support learning. It is necessary to collect data and analyse with analytical methods in order not to succumb to the rapid developments in the environment, especially in technology and to be proactive. In this context, it is necessary to evaluate open and distance flexible learning environments with strategic management principles and to establish continuous development and improvement cycles. This is because the technological changes developing very rapidly in the 21st century we live in reveal the necessity for reorganising open and distance learning environments and the need for continuous improvement. In this study, a model proposal is presented together with a conceptual perspective for a strategy decision model to be developed for open and flexible learning environments. The strategy is the methods and approaches the institution will follow to achieve a goal. Creating strategies in both institutional and educational processes, seeing the progress of the processes, making predictions and planning for the future are important steps to make evaluations. In strategic decision making, attention is drawn to the collection and evaluation of data by analytical methods with a synergistic structure, taking into account the knowledge, experience, wishes and expectations of stakeholders. Within the scope of this study, a research was carried out on how to implement the strategy decision model in developing an open and distance flexible learning environment.

Introduction

The advances in technology continue to gain momentum day by day. Those, who keep up with this change and who are positioned with the right strategies for the future, survive and ensure their sustainability. This is true for governments, companies, as well as individuals, events and learning environments. They can play a proactive role in the future with the right strategies. In this context, it is necessary for the success of education, which is the most important element in the life of societies, to set forth strategies with the same sensitivity in open and distance learning, flexible and personalised flexible learning environments, which is an application method integrated with technology.

* Open Education Faculty, Anadolu University, Eskişehir, Türkey, Email: emelgoksal@anadolu.edu.tr
** Vocational School of Technical Sciences, İstanbul University - Cerrahpaşa, İstanbul, Türkey, Email: buket.karatop@istanbul.edu.tr
*** Open Education Faculty, Anadolu University, Eskişehir, Türkey, gkurubac@anadolu.edu.tr
**** Dr B R Ambedkar University, Delhi, New Delhi, India, Email: rcsharma@aud.ac.in

There are various studies in the literature on the strategies of open and distance flexible learning environments. Berge (2001) states, "In an organization that has distance education and training as part of its profile, the key to sustaining technology-based learning at a distance is strategic planning." In his study, Hache (2000) proposes a strategic planning model adapted to the special needs of distance education in a proactive and technological environment. The proposed model is adapted to the specific features of distance education. The diagram created provides a nonlinear approach that shows the interaction and dynamics between various elements and decision-making bodies. Preparation of planning stages; information collecting, analysis, and systemic assessment; strategic decision; implementation; and assessment and management of the implementation are the five major components of this approach. Adams and Seagren (2004) compared three different strategic thoughts and strategic choices in their study of mental models and strategic choices in distance education. The study resulted in that: strategic views are more diverse than predicted; although strategic choices are adapted to local settings, they discuss common DE topics; and the strategic decisions made by the college and the views of the leaders are in sync. McLaughlin-Graham and Berge (2005) examined the strategic planning process in relation to the continuation of distance education and training in their study. Strategic planning is a critical part in the continuation of distance education. Thanks to this type of planning, it can solve business problems involving organisation, education and training in an effective and often cost-effective way compared to staff training efforts. Watkins and Kaufman (2003) proposes to initially conduct a needs assessment to determine whether institutions are eligible for distance education. These suggestions are derived from three fundamental principles: Distance learning is a tool for achieving a goal, not a goal in and of itself; not all outcomes are the same; and for the analysis to be effective, this 'need' should be treated as a noun rather than a verb. As more organisations try to implement or expand distance education programmes, integrating distance education programmes into broader strategic visions and plans becomes critical (Pisel, 2008).

Three experts in the fields of open and distance learning and strategic management worked on this research to develop a strategic decision model for the open and flexible learning environments. This study focusses on theoretical issues.

Open and distance flexible learning

Rapid developments in information technologies such as radio, television, telephone, computer, internet, satellite, etc. in the late 20th century not only affected human life, but also caused a paradigm shift in new education and teaching methods, especially affecting the functioning of educational activities. With these changes, new learning environments have started to emerge in open and distance learning systems. Especially recently, environments such as open course resources and massive open online courses have started to be offered by many leading institutions.

Learners are given several alternatives to customise their learning experience based on their requirements and interests in flexible learning (Demetriadis and Pombortsis, 2007). Making learning flexible depends on different variables such as lesson resources, variety of learning activities, environments used to support learning (Collis and Moonen, 2002a, 2002b). Li and Wong (2018), summarised the components of flexible learning by compiling them from different studies in the literature. These components are time, convent, entry requirement, delivery, instructional approach, assessment, resource and support and orientation or goal. The date/time determined for the start or end of a lesson and the learning rate in the lesson are included in the 'time' dimension. The flexibility of the content is related to the subject in the course

content, the difficulty level of this content and the order of the topics. The prerequisites for attending the course are in the dimension of 'entry requirement' and the platform on which the content will be presented is in the dimension of 'delivery'. What the learning activities will be, the language to be used, the presentation methods, the duration and type of these activities are determined in the dimension of 'instructional approach'. The 'assessment' dimension includes the assessment mode, standard, deadlines and grading of assignments and exams. While learning materials, tools and support services are in the 'resource and support' dimension, the orientation and purpose of the course are in the 'orientation or goal' dimension.

Different researchers focussed on different dimensions of flexible learning, and generally there is no holistic approach in the studies. Institutions in the field of open and distance learning offering flexible learning opportunities should develop specific strategies to plan the future. While there are different alternatives especially for individuals to choose from, it will be insufficient for each institution to only develop a strategy. The implementation of the developed strategies, their sustainability and the presence of control mechanisms are important points. Based on this point of view, the current study gives conceptual explanations on how to develop a strategic decision model for open and distance flexible learning environments, and afterwards a model is created.

Strategic management and strategic planning

"Strategy is used to create a focus, harmony, rhythm and purpose for an organisation by developing plans, manoeuvres, models, positions and perspectives to guide the strategic movement" (Nut and Backoff 1992:55). The strategy covers the measures and regulations taken to achieve the goals. It can also be considered as the path that all organisations will follow to survive and increase their effectiveness (Güçlü, 2003: 67).

Creating an institution's strategy consists of five interrelated stages (Thompson et al., 2016) (Figure 1).

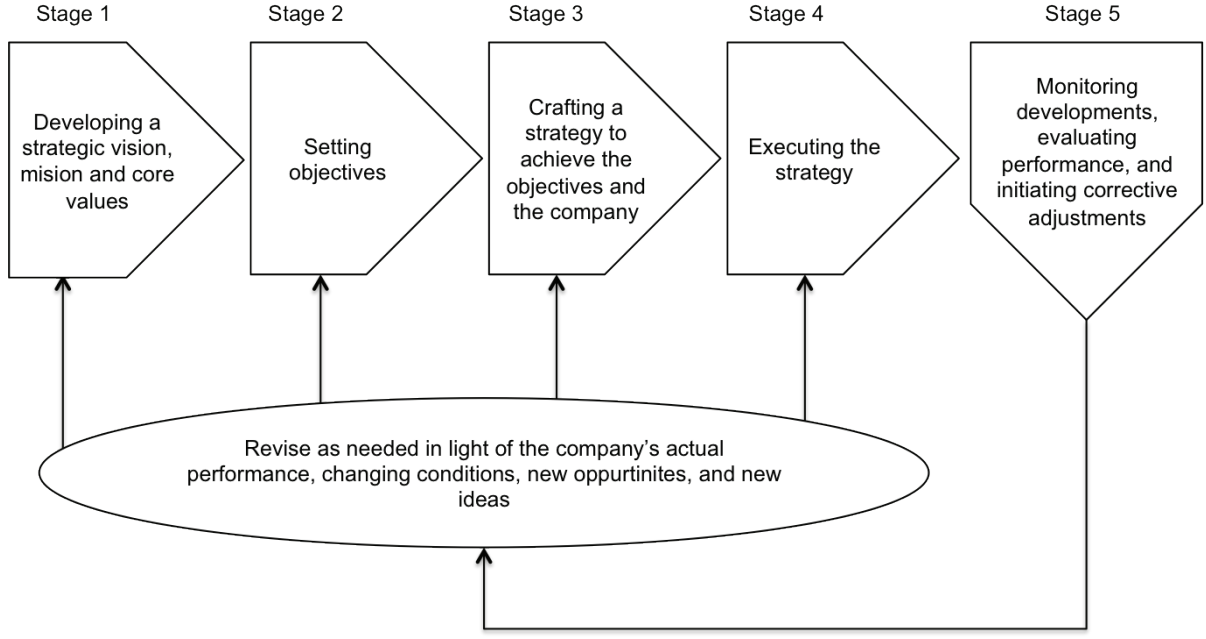


Figure 1. The strategy-making, strategy-executing process

Phase 1: Developing a vision that defines the direction the company wants to be in the future, a mission statement that defines the purpose of the company, and values to guide them.

Phase 2: Measuring performance to evaluate the direction the company will move forward in the long run.

Phase 3: To set a strategy and target to realise the big goal (vision) determined by the company management.

Phase 4: Implementing strategies effectively and efficiently.

Phase 5: Continuous improvement by following all the above steps regularly.

In the 21st century, which is becoming globalised and in which competition is intensifying, strategic planning is gaining more importance every passing day. Strategic planning, which is a discipline of questioning and investigation, seeks to answer the following three basic questions (Gürer, 2006).

1. What are we as an institution? (Which business are we in? What are the quality and quantity of our human resources? What are our management methods and techniques? Who are our customers?)
2. What do we want to be? (In which area do we want to do business? To which level do we want to bring our human resources? How will we improve our technology?)
3. How will we achieve our goals? (How to combine human resources, technology, finance and management strategies to achieve goals will be determined at this stage.)

In these questions, we have to add the question "How do we measure that we have reached our goal?" as the fourth item. With this question, the performance evaluation phase of the strategic plan is also created.

The strategic plan is expressed as the decision of where to reach in the future from the current situation, and how, as well as what is intended to be realised, and it is defined as the sum of the decisions on this issue (Demir and Yılmaz, 2010). The benefits of strategic planning for institutions have been expressed by experts in various researches. Bryson (2004) stated that the first benefit with regard to strategic planning is the promotion of strategic thinking and acting skill. The second benefit is that it provides improved decision making. The third benefit of strategic planning is enhanced organisational effectiveness and improved performance. *Fourth, beyond organisational effectiveness, strategic planning can produce enhanced effectiveness of broader societal systems. Finally, strategic planning can directly benefit the people involved.*

In addition to strategic planning, strategic management also deals with the management style, structure, culture, behavioural elements, and implementation and control functions of the enterprise (Ülgen & Mirze, 2010). Strategic management based on the strategies is open to development and innovation. It uses information and communication technology tools. Since the process is dynamic, processes need to be reshaped as conditions change and to maintain strategic management (Narinoğlu, 2009).

Decision making, in general, is a problem solving process by choosing, sorting or classifying among the available options (Karatop, 2015). The decision making process should start with identifying the decision makers and those affected by the decision outcome and minimising possible contradictions regarding the definition of the problem, options, needs, key objectives and criteria. The general decision making process is shown in Figure 2 (Özdemir, 2009).

Alternative criteria must be determined for decision making. If these are not available, there is no decision. The characteristics of the decisions we encounter in real life are multi-criteria, complex and uncertain. Karatop et al. (2018) benefited from expert and stakeholder views in the strategic decision model they created for domestic car production strategies in Turkey. In the study, it is emphasised that using this information, multi-criteria decision making techniques

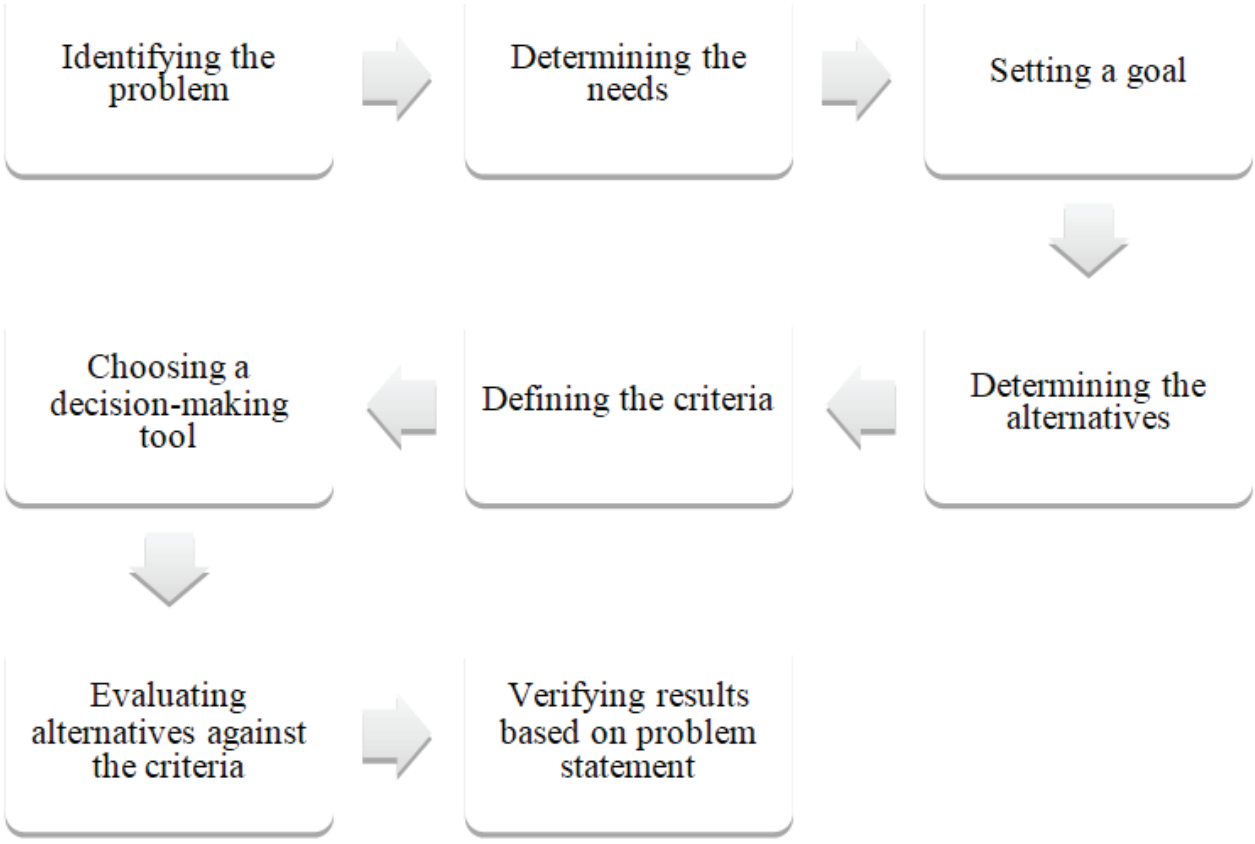


Figure 2. Decision making processes (Source: Özdemir, 2009)

integrated with artificial intelligence will contribute to the solution of the problem to reach optimal results.

Developing a strategy decision model for open and distance flexible technology-enabled learning environments

Strategy development is an important concept both institutionally and in terms of execution and sustainability of education in open and distance learning. The strategy decision model is developed to provide the closest solutions to real life problems (Karatop, 2015). Open and distance learning is a very strategic real life problem for societies. For this reason, the main strategic management tools and strategic decision making techniques are as follows (Aktan, 1998):

- SWOT analysis
- PESTS analysis
- Stakeholder analysis
- Portfolio analyses
- Q-Sort analysis
- Scenario analysis
- Vision/mission statements
- Call conference
- Delphi technique
- Nominal group technique
- Multi-voting
- Open group discussions
- Quality circles
- Cost-benefit analysis
- Risk analysis

Within the scope of this study, SWOT analysis, PESTS analysis, stakeholder analysis and difference analysis that can be used in forming strategies for open and

flexible learning environments, will be mentioned.

SWOT analysis

An important part of strategic management is strategic planning. An important part of strategic planning is current situation analysis. We can say that the most frequently used current situation analysis in the literature and practice is SWOT. The SWOT (strengths, weaknesses, opportunities, threats) framework provides evidence for strategy formulation, and analysis allows the collection of information about internal and external factors that may have an impact on the business (Pickton & Wright, 1998). The conceptual structure of the SWOT framework is as shown in Table 1 (Valentin, 2001).

Table 1. Conceptual structure of the SWOT framework

	Internal factors	External factors
Favourable factors	**S**trengths	**O**pportunities
Unfavourable factors	**W**eaknesses	**T**hreats

The strengths-weaknesses (SW) part of the analysis serves as in-house analysis and opportunities-threats (OT) part serves as environmental analysis. Therefore, the part that organisations can control and make the changes they want is SW. OT is the part where control is not with the organisation, but it will reinforce its position by taking measures (Kararop, 2015). Opportunities are the factors that can create positive results for the business as a result of the analysis of the external environment. Threats, unlike opportunities, are unwanted occurrences that arise as a result of changes in the far or near environment that may hinder the business from surviving or cause it to lose its competitive advantage. Strengths are the assets and abilities that have been revealed as a result of the analysis of the internal environment of the business and in which it can provide superiority to its competitors. Weaknesses indicate the situations where the current assets and capabilities of the enterprise are weak and low compared to its competitors (Ülgen and Mirze, 2010).

We can say that SWOT analysis is one of the important tools used in determining strategy. The strategies generally obtained from SWOT analysis are shown in Table 2 as SWOT strategies. The purpose of these strategies is to strengthen the institution or event by eliminating its weaknesses and to make use of all opportunities by

Table 2. *SWOT strategies (Source: Karatop, 2015)*

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Strengths	To reinforce the strengths more	To reinforce weaknesses by using strengths	To take advantage of opportunities by using strengths	To turn threats into opportunities or neutralise threats by using strengths
Weaknesses			To take advantage of opportunities that can reinforce weaknesses	To reinforce weaknesses to counteract threats
Opportunities			To take advantage of all opportunities by using opportunities	To turn threats into opportunities or neutralise threats by using opportunities
Threats				

turning threats into opportunities. The aim is to ensure sustainable development or improvement by performing this SWOT strategy cycle regularly.

PEST analysis

The concepts in PEST (political, economic, social and technology) analysis can be explained as follows (Downey, 2007).

Political factors include legal regulations such as labour laws, environmental regulations, tax policies, as well as political factors such as trade restrictions and political stability.

Economic factors affect an organisation's financial and purchasing power, such as economic growth, interest rates, inflation and exchange rates.

Socio cultural factors determine the needs and market size of the consumer such as population growth, age, cultural structure, and health.

Technological factors affect making new decisions and making investments on issues such as innovation, automation, investment incentives, and technological change.

Open and distance learning is an interdisciplinary field. It should not be considered as educational processes only. Many variables affect this system, from the technologies used to the characteristics of students, from the characteristics of institutional structures to changes in the economy, from the socio-cultural structure of the society to political stability. Therefore, the use of PEST analysis in open and distance learning in analysis processes will lead to correct results (decision).

Stakeholder analysis

Stakeholder analysis enables the identification of individuals, groups and organisations that will be directly or indirectly affected by the project results positively or negatively (Ünal and Ünal, 2015). Constant communication with stakeholders offers important opportunities to managers. Managers can evaluate organisational goals, provide unexpected opportunities for both stakeholders and the organisation, and prevent potential conflict before reaching the critical stage (Phillips, 2004 as cited in Sarıkaya, 2011).

Stakeholders are people who are related to a structure. They may be in a position that affects or gets affected by that structure. Stakeholder maps consist of wide categories. The probability of all people and groups in these categories to communicate or influence the institution is not equal. It may also not be possible for the institution to respond to the demands and expectations of all stakeholders at the same time (Grunig and Repper, 2005:142). It is necessary to determine which stakeholder groups have the most impact on the organisation, which expectations need to be considered more, and to what extent the expectations and effects of different stakeholder groups are diversified (Johnson et al., 2008, 103: as cited in Hoştut, 2018).

While designing open and distance learning environments, it should also be taken into consideration that there are many stakeholders in the system. It is important to involve stakeholders such as students, field experts, other experts, academics, volunteer learners, application developers, instructional designers, and administrators in the open and distance learning field. In open and distance flexible learning environments, involving stakeholders in decision making processes and performing stakeholder analysis meticulously plays a critical role in determining strategies.

Delphi technique

The delphi technique is often used for the prediction of factors in the technological environment. They enable experts with various opinions to share information and ideas on a particular subject and agree on a common decision on that issue. In this technique, experts do not come face to face, so it is not known which idea belongs to

whom (Ülgen and Mirze, 2010).

The delphi technique can be used in the design of open and remote flexible learning environments and in SWOT analysis. Right and optimum decisions can be made by transforming the demands and expectations of the stakeholders and the implicit knowledge and experience of different experts in the field into open information with the delphi technique.

Difference analysis: The difference analysis, which we can describe as the performance gap, is the difference between the expected situation and the desired situation in the future. It is not the difference between the current situation and the desired situation. In general, these two situations seem to be confused in practice (TÜSSİDE, 2007).

After determining the difference, answers to the following questions should be sought in general to identify the situation better and to make the analysis.Is the difference arising from the internal or external environment (from which factors of SWOT)?

- Are the organisation's potential resources (strengths in SWOT analysis) capable of closing the gap in performance?
- Can an appropriate strategy be developed (with strengths and opportunities in SWOT analysis) to close the gap?

To ensure continuous improvement in open and remote flexible learning environments, performance must be measured and negative aspects need to be eliminated with difference analysis.

Creating models

The model proposed in this study (Figure 3) is based on strategic management principles that are critical for businesses. Open and distance flexible learning is shaped on a certain mission and vision. We can say that it has values accepted by field experts. At the same time, it is necessary to analyse, and update the mission, vision and values that are named strategic concepts by field experts with analytical methods. The acceptance of these updated concepts by all stakeholders is another important aspect of the issue.

Since the mission is the reason for existence in strategic concepts, it does not require frequent changes. However, it is necessary to update the value and vision of education that feeds the capillaries of the society periodically by using stakeholder information in rapidly changing environmental conditions. We suggest that stakeholder information of these analyses should be done by analytical methods (multi-criteria decision making, fuzzy logic, artificial neural networks and other artificial intelligence methods).

The current situation analysis, which is the first step in determining the strategy, should be created by PEST and SWOT analysis. While PEST analysis completely analyses the entire environment of open and flexible learning with analytical methods, it is suggested in the model that the information of the field experts be obtained systematically with the delphi technique via the SWOT analysis question template. Thus, it is aimed to make SWOT analysis more inclusive and optimum.

Current situation analysis and in particular SWOT analysis can be described as the source of information for strategy formulation. Strategies for an open and flexible learning environment should

- reinforce its strengths even more.
- reinforce (weak) aspects that are open to development.
- take advantage of opportunities.
- turn threats into opportunities or eliminate threats.

It can be said that this will increase the added value of the learning environment.

Determining the performance criteria of the strategies is an absolute condition for continuous improvement. Performance criteria should be evaluated periodically and when there is a difference between the expected situation and the desired situation, the source of this difference should be sought in the SWOT analysis. This is

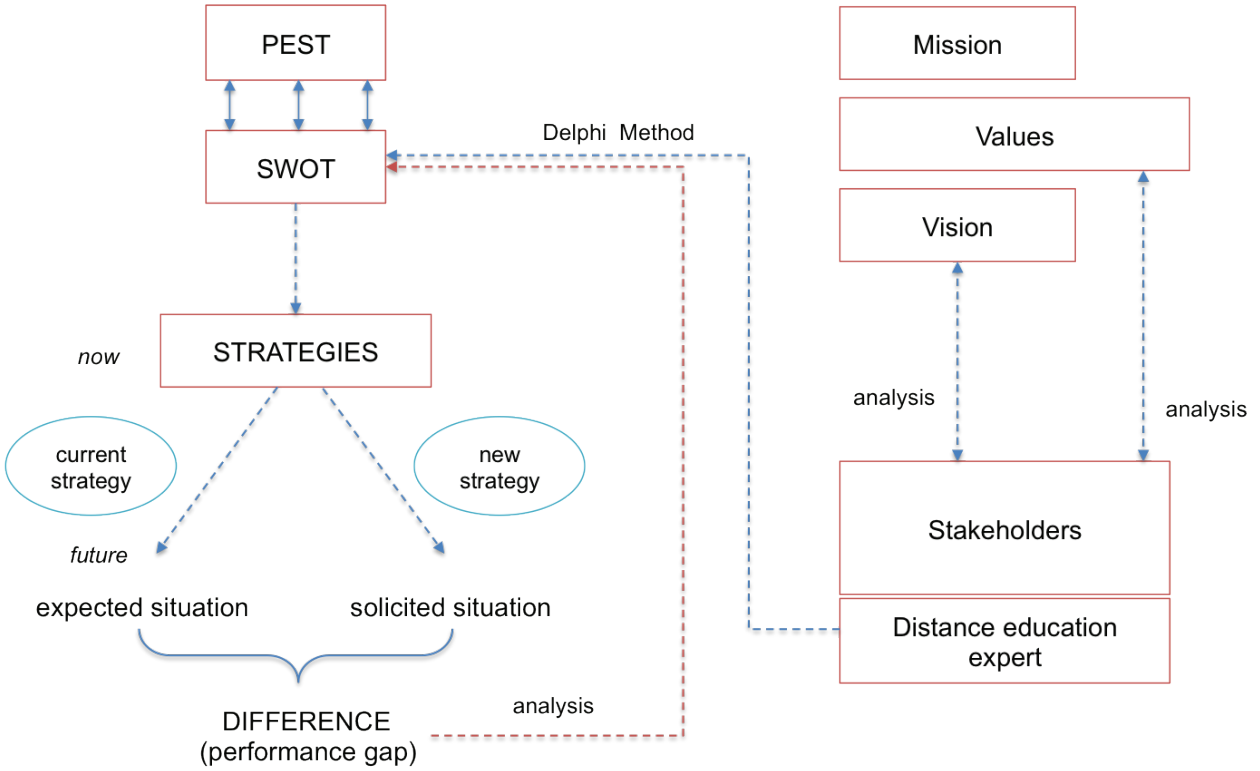


Figure 3. A strategy decision model proposal for open and distance flexible learning environments

because the strategies are based on SWOT analysis. If the strategies are not placed on an analytical basis, it will not be possible to detect where the difference may arise. At the same time, it is necessary to benefit from SWOT analysis to close the gap and to determine new strategies. For this reason, while creating SWOT analysis, which takes such an important place in the model, delphi technique is used to enable field experts to convey all their knowledge and forecasts.

Strategies in open and distance flexible learning environments should be evaluated periodically. Now, when we make this evaluation, we can see that "if we continue with this performance, we will not be able to realize the strategy with the desired performance at the end of the year." New resources (manpower, materials, more time) may then be required to close this gap. It also requires new strategies. The aim is to realise the strategy, objectives and activities of the current strategic plan.

Conclusion and implications

Creating strategies and making decisions about them is not a one-time application. There are also different variables such as whether the created strategies can be implemented or not and are sustainable. Open and distance flexible learning is a system integrated with technology. Developments and changes in technology lead to differentiation in open and distance flexible learning environments. Therefore, it is important to ensure the continuity of the strategies and adapt to changing environments. In this context, the proposed model has a dynamic structure and also ensures continuous development. It also uses a method that actively involves model stakeholders in strategies, transforming the implicit knowledge of the field experts into open information, thereby bringing their knowledge and experience to the analysis within a synergistic structure (SWOT).

While open and distance learning is a very strategic learning method that concerns

large masses, we can say that making decisions with analytical methods and strategic management principles will provide continuous improvement. The model is designed for this purpose.

References

Adams, J.C., & Seagren, A.T. (2004). Distance education strategy: Mental models and strategic choices. *Online Journal of Distance Learning Administration*, *7*(2), 1-14.

Aktan, C. (2002); "Geleceği Kazanmanın Yolu: Stratejik Yönetim", http://www.canaktan.org, (04.04.2017).

Berge, Z.L. (Ed.) (2001). Sustaining distance training: Integrating learning technologies into the fabric of the enterprise. San Francisco: Jossey-Bass.

Bryson, J.M. (2004). *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement.* (4th ed.) John Wiley & Sons.

Collis, B., & Moonen, J. (2002a). Flexible learning in a digital world. Open Learning, 17(3), 217–230.

Collis, B., & Moonen, J. (2002b). The contributing student: A pedagogy for flexible learning. Computers in the Schools: Interdisciplinary Journal of Practice, Theory, and Applied Research, 19(3/4), 9.

Demetriadis, S., & Pombortsis, A. (2007). E-lectures for flexible learning: A study on their learning efficiency. Educational Technology & Society, 10, 147–157

Demir, C., & Yılmaz M.K. (2010). Stratejik Planlama Sürecive Örgütler Açısından Önemi, Dokuz Eylül Üniversitesi İktisadive İdari Bilimler Fakültesi Dergisi, 25 (1).

Downey, J. (2007). Strategic analysis tools. *Topic Gateway Series*, *34*, 1-16.

Grunig, J.E., &Repper, F.C. (2005). Stratejik Yönetim, Kamularve Gündemler. *HalklaİlişkilerveİletişimYönetiminde Mükemmellik*, *1*, 131-172.

Güçlü, N. (2003). Stratejikyönetim. Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 23(2).

Gürer, H. (2006). Stratejik Planlamanın Temelleri Ve Türk Kamu Yönetiminde Uygulanmasına Yönelik Öneriler. *Sayıştay Dergisi (63)*, ss: 91-105.

Hache, D. (2000). Strategic planning of distance education in the age of teleinformatics. *The Online Journal of Distance Learning Administration*, *1*(2), 2-10.

Hoştut, S. (2018). Türküniversitelerinpaydaşanalizi. *ErciyesİletişimDergisi*, *5*(3), 188-200. https://dergipark.org.tr/tr/download/article-file/413765ErişimTarihi: 10.12.2019

Karatop, B., (2015). Yerli Otomotiv Yatırımında Odak Strateji Karar Modeli: Bulanık AHP Uygulaması, Doğu Kütüphanesi, İstanbul.

Karatop, B., Kubat, C., & Uygun, Ö. (2018). Determining the Strategies on Turkish Automotive Sector Using Fuzzy AHP Based on the SWOT Analysis. Sakarya University Journal of Science, 22(5), 1314-1325.

Li, K.C., & Wong, B.Y.Y. (2018). Revisiting the Definitions and Implementation of Flexible Learning. In Innovations in Open and Flexible Education (pp. 3-13). Springer, Singapore.

McLaughlin-Graham, K., & Berge, Z.L. (2005). Strategic Planning and Online Learning. *Journal of Educational Technology*, *2*(3), 24-29.

Narinoğlu, A. (2009). *Yerel Yönetimlerde Stratejik Yönetimve Planlama. Mart Matbaacılık, İstanbul.*

Özdemir, B. (2009). Karar Teorisi, Karar Ağacıve Tıpta Uygulamaları. Sağlık Ekonomisi, Sayı 2. http://saglikekonomisi.omegacro.com/karar-teorisi-karar-agaci-ve-tipta-uygulamalar (ErişimTarihi: 10.12.2019)

Pickton, D.W., & Wright, S. (1998). What's swot in strategic analysis?.*Strategic change*, *7*(2), 101-109.

Pisel, K.P. (2008). A strategic planning process model for distance education. *Online Journal of Distance Learning Administration*, *11*(2), 199-215.

Sarıkaya, M. (2011). PaydaşYaklaşımıBağlamındaİşletme-PaydaşEtkileşimiveStratejikPaydaşAnalizi. ASO Ankara Sanayi Odası Yayın Organı, 43-58.

Thompson, A., Peteraf, M., Gamble, J., Strickland III, A. J., & Jain, A. K. (2016). Crafting & Executing Strategy 20e: The Quest for Competitive Advantage: Concepts and Cases. McGraw-Hill Education.

TÜSSİDE, (2007). Stratejik Yönetim Eğitimi, Atatürk Üniversitesi, Erzurum.

Ülgen, H., & Mirze, S.K. (2010). İşletmelerdestratejikyönetim (5. Baskı). Beta Basım Yayım Dağıtım, İstanbul.

Ünal, M., & Ünal, Z.S. (2015). Projeyönetimindepaydaşilişkilerininrolüveönemi. SelçukİletişimJournal, 8 (4) , 90-103 . https://dergipark.org.tr/tr/download/article-file/178242ErişimTarihi: 10.12.2019

Valentin, E.K. (2001). SWOT analysis from a resource-based view. *Journal of marketing theory and practice*, *9*(2), 54-69.

Watkins, R., & Kaufman, R. (2003). Strategic planning for distance education. *Handbook of distance education*, 507-517.