

## Developing the Content of an Online Support System for International Students Using a Participatory Designer Approach

Ozan Coşkunserçe<sup>a\*</sup>, and Suzan D. Erişti<sup>b</sup>

<sup>a</sup>*Nevşehir Hacı Bektaş Veli University, Turkey*

<sup>b</sup>*Anadolu University, Turkey*

\*Corresponding author (Ozan Coşkunserçe): Email: [coskunserce@nevsehir.edu.tr](mailto:coskunserce@nevsehir.edu.tr)

Address: Faculty of Education, Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

### Abstract

*The aim of this study was to develop, with the participation of international students, the content of an online system that these students could use in the process of acculturation and adapting to a new environment. The action research with a participatory design approach was selected as the research model from among the qualitative research methods and was implemented. Within the scope of the study, the topics that the students were interested in with regard to Turkish culture, problems of adaptation to the Turkish culture and environment, and their expectations of the content of the online system to be developed were determined. These data were used to determine the main content heading of the online system. Later, the content development activities of the online system were carried out with the active participation of 18 international students in Turkey from Europe.*

**Keywords:** acculturation, cultural adjustment, international students, online orientation, online support, social adjustment, social support.

## **Introduction**

For a long time, universities have been encouraging more and more students to spend a period of study at an educational institution in another country to ensure that their graduates are competent and competitive in the international marketplace. Many universities are part of student exchange programs and are working to harmonize their systems with each other. Erasmus is the most well-known example of these student exchange programs. Its objectives are as follows: to strengthen education at all levels within the European Union; to ensure the widespread use of little-spoken European languages in particular; to support cooperation and mutual visits during education; to provide cultural exchange; to support innovations in education and to provide equality of opportunity in the education sector (Yağcı et al., 2007). Turkish universities also accept a large number of students from abroad as a result of the student exchange programs they participate in. The number of international students in higher education in Turkey passed 185,000 in the year 2019, and 63,704 of these were new admissions (YÖK, 2020). As of 2019, Turkey attracts the twelfth largest number of foreign students, and these international students have contributed over \$1 billion to the Turkish economy (Deveci, 2019).

Along with the increasing number of international students, the problems these students have in adapting have also gained importance. International students may face various difficulties while trying to adapt to the new culture, and they may experience feelings such as fear, loneliness, and anxiety; this process is called culture shock (Oberg, 1960). In addition, these students may experience a degree of academic-related shock if the host country's academic expectations and standards are new and confusing (Ryan, 2005). The many problems experienced by international students can be grouped under a number of headings: language barrier problems, social communication problems, problems related to the new teaching environment, cultural adjustment, and security and well-being (Lau et al., 2018; Roberts et al., 2015). International student support services have been established in universities with the aim of providing counseling and support services to help solve the adaptation problems experienced. The importance of the support services offered by universities to international students for academic success and the general satisfaction of students has been delineated by various researchers (Cho & Yu, 2015; Martirosyan et al., 2019; Perez-Encinas & Ammigan, 2016). However, studies on these support services have found that the majority of international students are not interested in using them, and they are often not even aware of them (Ang & Liamputtong, 2008; Constantine et al., 2005; Kilinc & Granello, 2003; Lau et al., 2018; Nguyen et al., 2019; Roberts & Dunworth, 2019; Russell et al., 2008). The low rate of use of university support and counseling services by international students is often said to be the result of cultural differences. International students from some countries do not like sharing their problems with strangers because of their culture (Arthur, 2017). In addition, it has been stated that international students are not able to obtain adequate support from these services, because universities cannot allocate sufficient budgets and personnel to them (Forbes-Mewett & Nyland, 2008; Sin, 2015).

The unwillingness of international students to apply to university services despite their adaptation problems, and their need for help in solving these problems, have led to a search for alternative ways of providing international students with support (Arthur, 2015; Bektas, 2008; Hsu, 2003; Yoon & Portman, 2004). At the present time, it is inevitable that students prefer technology-based approaches to meet their needs for learning and social interaction in an academic context (McLoughlin & Lee, 2007). International students are more likely to tackle their problems by adapting alone and are more likely to seek help online than domestic students (Nguyen et al., 2019). Moreover, as a result of the COVID-19 pandemic, it has been recommended that student counseling services be carried out entirely over synchronous and asynchronous media technology (Supriyanto et al., 2020), and that universities pay more attention to online social network and support programs (Edmunds, 2020). The optimal timeframe for providing support services for international students to avoid cultural adaptation problems is just before their arrival in the host country (Dalglish et al, 2011; Garza, 2015; Hsu, 2017; Murphy et al., 2002). In this timeframe, information and communication technologies are the most effective means of delivering support services to international students because students do not have access to face-to-face support services from universities. In this context, the provision of technological systems for overcoming the adaptation problems

experienced by international students, especially those who are trying to adapt to a new culture and academic environment, is particularly vital. The use of information and communication technologies (ICT) to provide online support services to international students is likely to help them in solving their adaptation problems. Moreover, in order for the support services for international students to be effective and fulfill their purpose, the academic and personal needs of the students should be taken into consideration in the design of these services (Roberts et al., 2015; Tillman, 1990). For this purpose, the students themselves need to be more involved in the development of support services for international students.

The aim of this study was to develop, with the participation of international students, the content of an online system that these students could use in the process of acculturation and adapting to a new environment. Answers were sought to the following research problems within the scope of the study.

1. What should be the content of an online system that supports international students' acculturation process and adaptation to a new environment?
2. How can an online system that supports international students' acculturation process and adaptation to a new environment be developed with the participation of a large number of international students as “content developers?”

### **Literature Review**

Most higher education institutions have established support services to help international students. Many studies have been conducted on the support services offered to international students in the USA in particular, and the support services identified in these studies have been noted. The most common types of support services offered to international students at universities in the USA are: online reading materials, required check-in at the international student office, international student orientation, and specific cultural events or activities for international students (Madden-Dent et al., 2019). The academic support and student services programs offered to international students at the top 20 US universities hosting the most international students are as follows: new student orientation (most widely offered service), advising and counseling, academic tips, workshops, and webinars on US academic life, tutoring, and supplemental instruction (Martirosyan et al., 2019). Most universities in the USA have an office that is dedicated to assisting international students and these offices provide support and advice on immigration, cross-cultural adjustment, housing, English-language proficiency, and opportunities to integrate into the campus and local community (Perez-Encinas & Ammigan, 2016). There are some studies on support services offered to international students in other countries as well. Support services offered to international students in Australia include advice on housing, psychosocial support, libraries, cafeterias, and healthcare, as well as academic assistance services (translation, CV preparation, interview techniques, employment, and article preparation) (Roberts & Dunworth, 2012). The areas that students most often asked to be better developed regarding support services are improving their quality, promoting them better, and making them easier to access (Roberts et al., 2015).

### **Challenges Experienced by International Students in Turkey**

The difficulties and integration problems experienced by international students in Turkey are quite similar to those identified in other countries. University students in Turkey mostly come from European countries with student exchange programs for a certain period or from the Central Asian Turkic Republics for the whole undergraduate education. The main reasons behind international students' preference for Turkey are geographical proximity and religious, cultural, historical, and ethnic similarity, adequate quality of education, the cheapness of living and education, scholarship opportunities, and suggestions by family or friends (Özoğlu et al., 2015). The main issues that international students in Turkey struggle with are communication, accommodation, the environment, cultural issues, health, and social

interaction activities (Gebru & Yuksel-Kaptanoglu, 2020; Ilhan et al., 2012; Titrek et al., 2016) and not getting enough information and support during the pre-and post-arrival process (Özoğlu et al., 2015). The social initiative, stability, emotional, open-mindedness, and cultural empathy were determined as meaningful predictors of adjustment of international university students in Turkey (Kağnıcı, 2012). Sonoubar and Celik (2013), stated that the main source of adaptation problems experienced by international students in Turkey is the cultural differences and language barrier.

### **Support Services for International Students in Turkey**

Since the integration problems experienced by international students in different countries are mostly the same, similar support services should be provided at universities in Turkey. There are also some studies on the support services offered to international students in Turkey (Beltekin & Radmard, 2013; Cevher, 2016; Güvendir, 2016; Şahin & Demirtaş; 2014; Yardımcıoğlu et al., 2017). When the extent of these support services was examined, it was determined that some universities did not have such an office or center (Şahin & Demirtaş, 2014). In other universities, international students mentioned the existence of centers that helped with their problems (Yardımcıoğlu et al., 2017); however, they were found to be fairly inadequate (Bektaş, 2008). International student centers established to provide support to international students are mostly located in big cities such as Istanbul, Ankara, and Izmir (Güvendir, 2016). Moreover, international students stated that the number, effectiveness, and continuity of the support services provided were all insufficient (Beltekin & Radmard, 2013; Cevher, 2016). It was also determined that international students perceived social support level was high and their level of loneliness was low in Turkey (Sever & Özdemir, 2020).

### **Social Media Networks**

Social media networks are one of the online technologies that can be used in the adaptation process of international students. These students tend to receive the most support in personal matters from their families and friends while using university support services mostly for academic procedures (Ang & Liamputtong, 2008). International students often set up online social networks based on their ethnicity in order to communicate with each other at the educational institutions where they are guest students (Ye, 2006a). In one study, international students who had used online social groups of this kind, and those who reported receiving higher levels of informational support from such groups, experienced lower levels of acculturative stress (Ye, 2006b). Moreover, the use of social media among international students is especially important in order to stay in touch with their family and friends in their home countries (Johnson et al., 2008; Thomas et al., 2017). The interaction of international students with online social networks in their home and host countries is associated with perceived social support (Billedo et al., 2019) and perceived social support has a positive effect on the adaptation process of international students (Bender et al., 2019; Geeraert & Demoulin, 2013; Li & Peng, 2019; Mikal et al., 2013; Trepte & Scharrow, 2016). There are various studies stating that online social networks in the host country can also contribute to the educational and cultural adaptation process of international students (Cao & Zhang, 2012; Magro et al., 2009; Pang, 2020). However, the extensive use of social media tools by international students also causes some problems. The students' reliance on social media networks based in their home country may limit their adaptation to the host country (Lee et al., 2011). It has also been determined that international students are a high-risk group in terms of loneliness and smartphone addiction (Jiang et al., 2018). It is understood that social media tools can significantly contribute to the online support services to be offered to international students. For this reason, the Facebook group created with the participant students and the Facebook module added to the online system were used to enrich the content of the online system.

### **ICT Support Systems**

Apart from social media networks, various ICT support systems have been developed at universities to support international students. Some researchers emphasize the scarcity of studies in the literature on the online orientation of international students (Garza, 2015). International students have stated that the online orientation services offered to them at US universities are very useful and provide constant access to the information they need (Güvendir, 2016). In an online orientation program, it is recommended that all resources available to students physically visiting the campus are available to students as online resources (Futch & Guthrie, 2012). Murphy et al. (2002) suggested that content such as “the history and mission of the institution, academic policies and requirements, acceptance procedures, financial assistance, different curriculums offered, the introduction of departments and faculties, list of online courses, technologies presented to students, activity calendar, sports activities, clubs, and organizations” be offered in web-based support systems for international students. Another study examined an asynchronous, online workshop on anti-plagiarism for an international students’ workshop (Goodsett, 2020). The Enhancing Student Mobility through Online Support (ESMOS) project supported by the European Commission aimed to increase student mobility with online support and the kind of support offered by universities online to international students was examined for this purpose (Walasek et al., 2007). The importance of online support services to international students is increasing due to the insufficient service provided by international student offices in Turkey. An online system, the content of which is arranged in accordance with the needs of international students and the titles determined in the literature, will significantly support the adaptation problems of international students.

Adaptation studies for international students carried out in the pre-arrival period are very important and ICTs have been applied in some studies for this purpose. Hsu (2017) developed an "online video-based pre-arrival course" to increase Asian students' desire to communicate in the American classroom. In another study, the aim was to inform and advise international students about the university they were going to and the city it was through a DVD containing 19 short videos (Dalglish et al., 2011). An example of an online orientation website prepared for international students who have not yet come to the host country is the website "Prepare for Success" developed by Southampton University. It includes activity-based learning resources to help international students acquire different aspects of academic life in the United Kingdom (UK) and the skills necessary for effective education (Watson, n.d.). International students were found to be very interested in pre-arrival online orientation, and they requested that the website to be prepared contained information about accommodation, transport, weather, clothing, food, local area and activities, visa and work regulations, academic and university life, the healthcare system, and cultural activities (Garza, 2015). As can be seen from the studies, the pre-arrival section should be included in the online support services to be offered to international students and should be supported with rich content. Although traditional theories for cross-cultural adaptation call the first days of international students in the host country as honeymoon (Oberg, 1960), it is stated in new studies that this period is quite difficult especially for students who do not receive enough support and do not have experience of international mobility (López, 2021). For this reason, a separate section with the title of "arrival" has been added in the online system and content that can support international students during their arrival in Turkey has been added.

### **Theoretical Framework**

According to a definition provided by Andrade (2006), international students are “individuals enrolled in institutions of higher education who are on temporary student visas and are non-native speakers” (p. 134). The adaptation process of international students to the culture of the host country has been tried to be explained with various theories on acculturation. Redfield et al. (1936) defined acculturation as: “Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups” (p. 149). Acculturation taxonomies can be used to classify the adaptation processes of students who encounter the culture of the host country. In Berry's (1997) model, acculturation is

explained as a bi-dimensional (maintaining heritage culture and participating in new culture) process of adjustment, and the acculturation process is grouped under four categories with the cross-tabulation of these two cultural dimensions: assimilation, integration, marginalization, and separation. In recent years, it has been argued that the bi-dimensional acculturation framework is inadequate to fully describe the acculturation process due to the multicultural nature of the host countries, and the three-dimensional (their culture of origin, European American culture, and African American culture for black U.S. immigrants) acculturation model has been proposed (Ferguson et al., 2012, 2016). The acculturation framework developed by Arends-Tóth and Van de Vijver (2007) was used in a study with international students in the Netherlands. According to the results of the study, host orientation (predicted by high personal growth initiative, Dutch proficiency, and low perceived cultural distance) and expatriate orientation (predicted by low Dutch proficiency) are positively associated with adjustment, while heritage orientation (predicted by low English proficiency) is negatively associated (Taušová et al., 2019). The intense cultural interaction experienced due to globalization also causes globalization-based acculturation. According to Chen et al. (2008), “the central issue for globalization-based acculturation may not be traditional bicultural identities but rather the selective incorporation of cultural elements from the various cultural worldviews and practices to which a person has been exposed during his or her life” (p. 806). In addition, transnational relations also affect the acculturation process. Transnationalism can be explained as “multiple ties and interactions that link people or institutions across the borders of nation-states” (Vertovec, 1999, p. 447). Transnational contact is seen as a third dimension of the acculturation process and is thought to be positively related to cultural maintenance (Van Oudenhoven & Ward, 2013).

## **Methodology**

### **Research Model**

The action research with participatory design approach was selected as the research model from among the qualitative research methods and was implemented. Action research is a research approach that is carried out by a practitioner (such as a manager, teacher, educational expert in a school, engineer, manager, planner, and human resources specialist in other organizations) who is in the practice themselves. It involves systematic data collection and analysis to reveal problems related to the application or to understand and solve a problem that has already arisen (Yıldırım & Şimşek, 2006). Action research emphasizes cooperation between researchers and practitioners.

### **Participants**

All the participants in the two stages of the study were international students from European countries coming to Turkey through international exchange programs. Of the nine students who participated in the semi-structured interviews conducted in the first phase of the study, four were male and five were female. Three students were 21 years old, three students were 22 years old, two students were 23 years old, and one student was 24 years old. Students came from different countries in Europe through the Erasmus student exchange program. Two students each came from Poland, Estonia, and Lithuania. One student was from Hungary, Spain, and Romania. Seven of the students were studying in a Department of Fine Arts in their country and at Anadolu University. One student was studying at a Department of Communication and one at a Department of Pharmacy.

The content development work that constituted the second part of the study was carried out within the scope of the research. During the semester, the content development for the online system, which had been previously designed, was completed with the participation of 18 international students. Four of the students were male and 14 were female. The ages of the students ranged from 21 to 24. Four of the students were 21 years old, five were 22 years old, two were 23 years old and seven were 24 years old. In terms of their nationalities, seven students were Spanish, five were Polish, three

were Lithuanian and the others were Portuguese, Hungarian, and Slovenian. The departments where the students studied in their home countries differed: Three students each were in a Department of Communication Sciences, Department of Journalism, and Department of Business; two students each were in a Department of Educational Sciences, Department of Economics, and Department of Science; one student each was in a Department of Chemical Engineering, Department of Social Sciences and Department of Public Administration.

### **Data Collection**

Due to the fact that the research model was based on qualitative research methods and the research was applied with different processes at different periods, many different tools were used for data collection. In action research, data collection should not rely on a single data collection tool, but data should be collected at different times and in various ways (Johnson, 2019). Semi-structured interviews with students, video recordings of lectures and validation committee meetings, and the students' sharing on the online system and online social networks were used as data sources in the research process.

In action research, initial data originates from interviews with the key and initial stakeholders (Ocak & Akkaş Baysal, 2019). For this purpose, an interview form consisting of 11 questions was used in semi-structured interviews with nine international students at the beginning of the study. During the development of the interview form, the literature was reviewed, and interview questions were formulated in line with the problems experienced by international students. A language and content validity study of the form was carried out by a language and two experts in the field. An interview form consisting of 11 questions was also used in the semi-structured interviews applied at the last stage of the study. During the preparation of the form, a validity study was conducted by obtaining the opinions of three experts in the field.

The validation committee consists of three experts in the field. During the research process, the knowledge and experience of the committee members were consulted in the application of the research model, the design and development process of the online system, and in finding solutions to problems identified in the online system. Audio recordings were taken during the validation committee meetings, and the recordings were later used as data. The audio recordings of each meeting were analyzed, and the decisions taken were reported. At the next meeting, the committee members were informed about the implementation of the decisions noted in the report.

In order to examine the content development activities carried out, video recordings were taken, and these recordings were then used as data. At the end of each seminar, the researcher examined and analyzed the video recordings. In addition, a Facebook group was created to obtain students' ideas about content studies and make announcements; all students were allowed to become members of the group. Questions about the content development process were shared on the Facebook group and the answers of the students were used as data in the research. Moreover, the content uploaded by the students to the online system was also used as data within the scope of the research. As the online system was developed based on the Joomla Content Management System (CMS), many users were able to add content as authors. In this process, the researcher provided the students with the necessary training to share content and provided technical support for the problems experienced by the students.

### **Procedure**

The studies carried out within the scope of the research are divided into two parts. In the first phase of the research, semi-structured interviews were conducted with nine international students. This stage sought to answer the first research question. The semi-structured interviews aimed to determine the problems of international students and what they expected from the online system that would be developed. All the students who had come to Anadolu University in Turkey from European countries with student exchange programs were continuing their undergraduate education.

The second phase of the research tried to answer the second research question. At this stage, the participatory design approach was utilized in the content development studies carried out with the 18 international students in a seminar setting using the action research method. According to the "Computer Professionals for Social Responsibility" (2005), the participatory design approach is an approach that is used in the evaluation, design, and development of technological and organizational systems and actively seeks participation in the design and decision-making processes of the system's users (usually existing or potential users of the system). In the participatory design approach, the researcher, who can also participate as a designer has an important role in managing and facilitating the research process (Sanders & Stappers, 2008). The researcher is expected to guide the participants to contribute to the process, encourage the participants to fully express their creativity and assist when the participants need technical support.

### **Data Analysis**

The second phase of the research tried to answer the second research question. At this stage, the participatory design approach was utilized in the content development studies carried out with the 18 international students in a seminar setting using the action research method. According to the "Computer Professionals for Social Responsibility" (2005), the participatory design approach is an approach that is used in the evaluation, design, and development of technological and organizational systems and actively seeks participation in the design and decision-making processes of the system's users (usually existing or potential users of the system). In the participatory design approach, the researcher, who can also participate as a designer has an important role in managing and facilitating the research process (Sanders & Stappers, 2008). The researcher is expected to guide the participants to contribute to the process, encourage the participants to fully express their creativity and assist when the participants need technical support.

### **Data Analysis**

Validity committee meetings were frequently held during the action research process, and prior to these meetings, a quick analysis of the data collected in the previous weeks was required. For the action research process to be continuous and the necessary decisions to be made, the analysis of the data was mostly conducted in two stages. In the first stage, the video recordings obtained in the weekly seminars and what the students had shared on the website and the Facebook group were transcribed and examined with macro-level descriptive analysis. To do this, a framework for descriptive analysis was first created. In this framework, each design element studied was organized as a separate theme. The opinions expressed by the students and the field expert about each theme were summarized in a report as a result of the descriptive analysis at the macro level. This report was presented to the field experts at the validation committee meetings and decisions were taken in line with these data.

After the data collection process was completed, the second stage of the qualitative data analysis was started, and a holistic descriptive micro-analysis of the studies conducted during the period was made and reported. Within the scope of descriptive analysis, video recordings of the seminars and validation committee meetings and comments made by students in electronic media were collected under themes. For semi-structured interviews, the first stage was skipped, and descriptive analysis was made directly. First, the previously interpreted data was coded and grouped under themes by two researchers. Later, the results of the two researchers were compared, the differences identified were discussed, and a definitive conclusion was made. Finally, the transcripts of the qualitative data and the data related to the problem are presented under the parent themes and sub-themes with direct quotations.

## **Results**

The content development of the online system started with the semi-structured interviews of the nine international students. These interviews tried to determine the topics that the students were interested with regard to Turkish culture,



problems of adaptation to the Turkish culture and environment, and their expectations of the content of the online system to be developed. These data were used to determine the main content heading of the online system and the system was created in line with the interests, problems and expectations of these international students.

### **Results about the Topics That International Students Were Most Interested In Regarding Turkish Culture**

The semi-structured interviews tried to determine the topics that international students were most interested in with regard to Turkish culture. The results of the analysis of the interviews are given in Table 1 below.

**Table 1.**

*Topics in Turkish culture that interested international students*

Themes	<i>f</i>
Food	6
Clothing and textiles	4
Art	3
Language	3
Music	3
Architecture	3
Habits	2
Religion	2
Human behaviors	2
Culture	1
History	1

As shown in Table 1, six of the students who participated in the interviews stated that they were interested in Turkish foods. One of the students (Interviewee #3), talking about food, stated: “I am interested in Turkish food. I can eat fast food, but when my Turkish friends come back from their homes, they bring food from their mothers and families. These are pretty interesting things.” The international students are interested in Turkish food because it is quite different from their own countries. Interviewee #5 stated: “I am interested in food and religion. Because it is different from my country and nice.” The desire to experience new tastes was found to be the reason for students' interest in Turkish food. In addition, four students expressed their interest in Turkish textile and clothing products. These were the most popular topics among the students with regard to Turkish culture.

### **Results about the Problems of International Students**

The international students' comments concerning the problems they had experienced were grouped under two sub-headings: daily life problems and academic problems.

**Table 2***The problems of international students*

Themes	<i>f</i>
Problems in the daily life of international students	12
Communication	6
Finding an apartment	3
Getting a mobile phone simcard	1
Security at night	1
Bus times	1
International students' academic problems	15
Course selection	6
Communication with university staff	5
Differences in the grading system	1
Some parts of the university website are not in English	1
Lack of sufficient English content in the courses	1
Filling in forms for permissions	1

As Table 2 shows, six of the students stated that communication was the biggest problem they have in daily life. Interviewee #4 explained: "Language becomes a problem when I go shopping or ask someone something on the street." The students had communication problems due to the fact that the people they communicated with in their daily lives did not know a foreign language. In addition, interviewee #1 stated: "When I first came here, a room was reserved for me, but there was a problem. Someone had put their things in the room, and they said they had nowhere else to put them. This was a big problem for me because I couldn't find a place to put my luggage." Although assistance was provided regarding the accommodation of the students, there were still problems in finding an apartment.

When the students' comments about their academic problems were examined, most comments were made about course selection. Interviewee #7 stated: "I chose some courses at my own university, but when I came here, I found out that the teachers teaching these courses could not speak English and I had to change them." The students found that the courses they had chosen with the aid of their advisors in their home countries were not suitable when they arrived at the university. However, the comments of the students also suggested that these problems were mostly solved by their coordinators at the university.

### **Results about International Students' Expectations of the Content of the Online Support System**

The international students' expectations about the content of the online support system were grouped under the headings of expectations of cultural, social, academic, and individual content.

**Table 3***International students' expectations of the content of the online system*

Themes	<i>f</i>
Students' expectations of cultural content from the online system	13
Foods	4
Habits	3
Turkish language	2
Religion	1
Politics	1
Historical facts	1
Famous politicians	1
Students' expectations of social content from the online system	6
Shopping recommendations in city	1
Tourist attractions in city	1
Information about the city and a map	1
Information about the university cafeteria	1
Information about the fun places in city	1
Information about bureaucratic procedures	1
Students' expectations of academic content from the online system	5
Information about courses	3
Information about the faculty	1
Information about the library	1
Students' expectations of individual content from the online system	6
Quick answers to questions	3
Up-to-date information	1
Friendly design	1
Ease-of-use	1

As can be seen from the Table 3, the cultural content that the students wanted to see most in the online system was about Turkish food with four comments. Talking about this issue interviewee #8 said: "I think it should promote traditional foods, not convenience foods." There were also three comments about "habits." Habits mean the general behavior of Turkish people in their daily lives. From these data, it can be understood that the students wanted to get to know more about the daily lives of Turkish people. The most requested academic content in the online system was "information about courses" with three comments. For example, interviewee #1 said: "The level of the course, what it includes, what language is used, how many credits do we get when we choose the course?" When the comments of the students regarding their individual expectations from the online system were examined, the most requested was "quick answers to questions" with three comments. From this result, it can be understood that a small number of students wanted a live "help service" from the online system.

The expectations of the students were then examined at the validation committee meetings, and it was decided that the main sections of the online system should be as follows: "Incoming Students", "Daily Life", "Culture", "Traveling", "Photos and Videos", and "Basic Turkish."

### **Results Regarding the Content Development Process**

Determining which content would be developed by each student was the main concern of the research before the content development process for the online system began. Since the content was to be developed with the participation of a large number of international students, the distribution of tasks among students needed to be well planned, and the topics had to be in accordance with the interests and knowledge of the students. To this end, the students were asked what kind of content they could prepare under the six main sections and to volunteer for specific subjects. Some students volunteered for “clothing” and “cultural sites” under the “daily life” and “travelling” sections, and for “Turkish food” under the “culture” section. At the end of the seminar some of the students agreed to take on responsibility for developing content, but most of them did not express their opinions. Therefore, the students were asked to share their content suggestions for the online system on the Facebook group.

The majority of the students suggested content for many different topics. For example, interviewee #1 said: "I think we should add more information. For example: what documents you need for residence permit, how you can get to the police station, where you can register your phone. Also, we could create new content for our cultural events. For example, concerts, festivals, trips." Interviewee #5's comment was as follows: "I think it should be a new page with videos about the Turkey (folklore, pop, rock etc.) and other pages with the experience of those who have already done Erasmus in Eskisehir."

The students' content suggestions were discussed in the third week. Their suggestions were repeated as a list and each student took a topic to work on from the list. Some of the suggestions, for example “flats for rent” and “second-hand furniture,” were not selected by the students. Each student's topics are listed in Table 4.

**Table 4**

*Students' content development topics*

Participant number	Topics that students wanted to develop content about	Section
1	Traveling	Traveling
2	Suggested places for eating and drinking in Eskisehir	Daily Life
3	Suggested places for buying clothes in Eskisehir	Daily Life
4	Recommended places for social interaction in Eskisehir	Daily Life
5	Turkish culture	Culture
6	Turkish foods	Culture
7	Campus map	Daily Life
8	Museums and cultural sites in Eskisehir	Daily Life
9	Museums and cultural sites in Eskisehir	Daily Life
10	Daily life and sounds in Eskisehir	Daily Life
11	Suggested places for social interaction in Eskisehir	Daily Life
12	Tourism destinations	Traveling
13	Tourism destinations	Traveling
14	Recommended places for buying clothes in Eskisehir	Daily Life
15	Turkish history	Culture
16	Turkish language	Turkish Language
17	Turkish language	Turkish Language
18	Hitchhiking	Traveling

Developing the content of the online system with the collaboration of a group of international students was a different and interesting web-design project. For this reason, many decisions were made during the seminars and in the validation committee meetings to make the design process more effective within the action research process. The action plans formulated during the research process, based on decisions taken at the validation committee meetings, were as follows:

#### ***Action Plans on Content Management System***

Each student will have an account on the CMS with an editor user type to write new articles and edit existing articles. On the other hand, this user type also gives students the opportunity to edit/delete all previous content. Although the students were given author user type at the beginning, after careful analysis, it was decided to give editor user type to all students and to warn students not to damage pages that do not belong to them.

#### ***Action Plans on Facebook Group***

There will be a Facebook group for students. The researcher will post questions on each week on the Facebook group and students should reply with a comment. These comments will then be added to the online system as content. Thus, the content of the online system will be enriched even more.

#### ***Action Plans on Facebook Module***

Students will post comments on the online system with the Facebook comment module on each web page of online system. Each student is responsible for their topic as an administrator, and they will direct other students to add content and comment for their topic. By using the Facebook module, new students will be able to communicate with experienced students, and all students will also be able to share their experiences by commenting.

#### **Results Regarding the Evaluation Process**

After the development and publication of the online system, semi-structured interviews and focus group interviews were conducted with eight international students and they were asked to evaluate the online system. First of all, it was observed that all of the students were aware of the online system and actively used it. Seven of the students (87.5%) stated that they were aware of and connected to the online system through the Facebook student group. All of the students who participated in the interviews found that the most helpful part of the online system was "information". The reason for the interest in the information section is that students mostly need online support before coming to the host city, and after they come, they can get the information they want from their friends and Turkish students with whom they are matched. Three of the participants cited the "before you arrive" article in the online system as the most helpful article for them and this finding supports this view.

When the students were asked about the section they found unnecessary in the online system, it was seen that the answers were not concentrated under a single heading, but different answers were received. In this case, it can be understood that there is no section that students generally find unnecessary. As a result, it is understood that the content development studies of the online system achieved its purpose, and the students did not find a title unnecessary.

#### **Discussion and Conclusion**

The main goal of the current study was to develop content, with the participation of international students, for an online system that international students could use in the process of acculturation and adapting to a new environment. In the first phase of the study, data were collected through semi-structured interviews with nine international students. At this stage, the aim was to use the data collected to determine the main sections and content of the online system. International

students in Turkey have cited cultural reasons as the main reason for choosing Turkey for the Erasmus exchange program, and stated that they wanted to get to know a different culture and cuisine (Şener & Gün, 2019). They have also stated that cultural proximity was the biggest factor in choosing Turkey for their experience studying abroad (Snoubar & Celik, 2013). The data obtained from the semi-structured interviews with the students were taken as the basis for the design of the relevant sections. For this reason, the first task was to try to determine the topics that international students were most interested in with regard to Turkish culture.

It was determined that the topic that attracted the most international students' attention regarding Turkish culture was food. Other topics that attracted their attention were clothing and textiles, art, language, music, and architecture. In accordance with the present results, previous studies with international students in Turkey have demonstrated that the majority of students had positive thoughts and curiosity about cultural elements such as the "environment, the food, the language, and the people" (Çetin et al., 2017). International students adapt easily to Turkey's rich culture, exotic flavors, eating habits, and food culture (Ozgen & Yaman, 2014). In addition, within the scope of the study, data were collected about the expectations of international students regarding the cultural content of the online system. The content that the students wanted to see most in the online system was about food in Turkey. These results show that the international students had a positive attitude and curiosity towards Turkish food. For this reason, it was decided to provide detailed information about Turkish food under the main "Culture" section in the online system. The willingness of the students to examine the elements of the guest culture and to apply them in their daily lives shows that they are more in line with the concept of integration in Berry's (1997) classification.

In the semi-structured interviews, the opinions of the international students were also sought about the daily life and academic problems they had experienced. The area that the students had the most daily life problems with was communication. These results reflect those of Snoubar (2017), who also found that the most significant problem that international students experienced in daily and social life was to do with communication, as a result of language deficiencies. Many studies have found communication problems to be an important obstacle for the adaptation of international students to the host country (Aydın, 2020; Ibrahimoglu & Yilmaz, 2018; Kılıç et al., 2021; Lee, 2010, Robertson et al., 2000). In addition, it is stated that the inability to effectively accommodate the linguistic needs of international students in western universities is an important adaptation problem (Agostinelli, 2021). The poor English of Turkish students has been shown to be the main reason why international students are not able to make friends (Aydın, 2020). In addition, in the research conducted by Tausava et al. (2019), interest in the native language was found as an indicator of a high level of adjustment to the guest culture. For these reasons, it was decided to create a main section about "Basic Turkish" in the online system, which provided a basic level of Turkish language knowledge in order to facilitate international students' communication. Another reported daily life problem was finding an apartment. This also accords with other observations showing that accommodation is a problem for international students in Turkey (Cevher, 2016; Koçyiğit & Erdem, 2015; Kocabıyık et al., 2019); and that most students choose to live in an apartment (Yilmaz, 2020). Finding an apartment is often a problem for international students when they first enter a host country. Support offices within the universities try to solve this problem, and it is a difficult issue to solve online. For this reason, there was no content on this subject in the online system.

A common view amongst interviewees was that course selection and communication with university staff are the two most important academic problems. In another study, international students in Turkey stated that they tried to reach their advisors when they encountered a problem related to the courses, but their advisors did not help them (Cevher, 2016; Yilmaz et al., 2020). In addition, the relative lack of university services for international students was also stated to be a problem (Kocabıyık et al., 2019). International students often have to drop out of courses because the language of instruction of the courses they have chosen is not English. For this reason, communication problems are also at the root of issues regarding course selection. This was, however, an issue that could not be included in the online system, since it is

entirely the responsibility of the official departments of the university. Therefore, no content about course selection was created in the online system.

Finally, in the semi-structured interviews, data were collected about the international students' expectations regarding the cultural, social, and academic content of the online system. The topic that the students expected the most content about was food. This also accords with our earlier results, which showed that the most popular topic regarding Turkish culture was food in Turkey. As a result, besides the creation of a heading for "food" under the main section of "culture," information was given about eating and drinking places under the main section of "daily life". Other topics that students want to see as content were habits and the Turkish language. The students' expectations for social content were: store recommendations, tourist attractions in the city, information about the city and maps, information about the university cafeteria, fun places in the city, and bureaucratic procedures. Each of these headings received a comment. There was no specific social content that was heavily demanded by students. However, each of the above topics was included as content under the main section about "daily life".

The academic subject that students expected the most content about was information about the courses. However, this subject was not included in the content of the online system as it is information that can only be provided by the official departments of universities. The individual content that the students wanted most was "quick answers to questions". For this purpose, a module was added to the online system that was active on all the pages. Other students would thus be able to answer the questions asked using this module through their social media accounts. This would ensure that questions are answered as quickly as possible.

At the end of this phase, the main sections of the online system were determined to be "Incoming students," "daily life," "culture," "traveling," "photos & videos" and "basic Turkish." Kelo et al. (2010) explained that the support services offered to international students consist of three stages: pre-arrival, on arrival, and during the period of study. Perez-Encinas and Rodriguez-Pomeda (2018) argued that a "reintegration after the mobility period" should be added to these three phases. "Incoming students", one of the main sections planned for the online system, directly included the first of these stages, "pre-arrival", as content. It has been emphasized many times that the best time to give students assistance is before they arrive in the host country (Dalglish et al., 2011; Garza, 2015; Hsu, 2017; Murphy et al., 2002) and online support is a valuable way of giving assistance to students before they travel abroad (Goodsett, 2020; Ye, 2006b).

These results corroborate the findings of a great deal of the previous work in acculturation theory. Berry (1980) states that international students experience changes in language, cognitive styles, personality, identity, attitudes, and acculturative stress psychological function areas. In accordance with the language psychological function area, the most problematic issue for students in daily and academic life was communication. International students also want the online system to offer them language-related content. Since participants of the study have come within the scope of the Erasmus program, the time they will spend in Turkey is mostly limited. For this reason, it is thought that the students want to know Turkish culture, but they do not feel the desire to fully adopt Turkish culture. In Berry's acculturation model, the integration section is defined as "there is some degree of cultural integrity maintained, while at the same time seeking to participate as an integral part of the larger social network" (Berry, 1997, p. 9). However, some students may prefer to stay away from the guest culture, it can be said that the students in this situation are closer to the separation part in Berry's model. Due to the imprecise transitions between the sections of the model, some students may be positioned between the two sections. However, since the majority of the students participating in the study expressed their desire to get acquainted with Turkish culture, it is considered more appropriate to include the students in the integration category. Therefore, it can be concluded that the international students participating in the study follow the "integration" acculturation strategy mentioned in Berry's model. Navas et al., (2007) describe seven spheres of acculturation (political, work, economic, social, family, religious, and ways of thinking). Parallel to these topics, it was observed that the students showed interest in topics such as politics, religion, habits, historical facts, and famous politicians and thus tried to

contribute to the acculturation processes. In addition, acculturation occurs at three different levels: behavioral, affective, and functional (Cuellar et al., 1995). At the behavioral level, various types of behaviors such as language development, customs, food, music, and dance are undergoing change. It is understood that the students show interest in the same topics in Turkish Culture in their comments since they are mostly in the process of change at the behavioral level. In addition, the students wanted content suitable for their changes in this behavioral level in the online system.

Transnationalism is seen as an important factor influencing the acculturation process in more recent studies. With globalization and the development of communication opportunities, transnational activities have become easier for international students. It is stated that transnational activities can help individuals in the integration process to preserve their own culture by keeping their ties strong with their own countries (Van Oudenhoven & Ward, 2013). In addition, it is seen that the students participating in the study are able to establish connections with their own countries more easily because they are active social media users, and the use of social media is an important help in reducing the feeling of loneliness (Johnson et al., 2008; Thomas et al., 2017). In the second phase of the study, practical exercises were carried out with regard to developing the content of an online system for international students to help them in the process of adapting to the Turkish culture and environment, and findings were obtained in this context. Work on the development of the content of the online system was carried out with the active participation of 18 international learners who were taking courses in content development studies. The active role of students in the content development process was made possible through an interactive process aimed at structuring the online system on the basis of the target audience.

Usernames and passwords were created with author user type for all students so they could add content to the online system during the course. Users with author rights can add articles but cannot edit existing articles in the Joomla CMS. During the following weeks, the students wanted to make changes in their own articles and add new content to other students' articles. For this reason, the students' accounts were changed to give them editor rights. Granting editor rights to students carries the risk of them editing other students' content. However, students were warned not to change other students' content and no adverse events were encountered during the study period. For this reason, it is recommended that a CMS be used to give participants editorial authority in online content development studies that involve a large number of collaborators. Moreover, for security reasons, it is necessary that content be regularly backed up.

The students' own implementation of content development in a social network-assisted configuration allows them to better adopt participatory roles. The use of Facebook groups in the seminars facilitates the communication and cooperation of students with each other and with the course instructor (İşçitürk, 2017; Keleş & Demirel, 2011; Serhateri & Yıldırım, 2014). Students who have used Facebook before have a positive attitude towards using Facebook as an educational tool and tend to post more in Facebook groups that have a teacher as a moderator (Kayri & Çakir, 2010). The advantages of using Facebook in an educational way are also thought to encourage international students to share content in online systems. This study found that the international students shared their views in the Facebook group regularly over the following weeks, and this sharing was used to enrich the content of the online system. At the end of the content development process, the various subjects outlined above all had sufficient content. The content developed and the studies carried out were regularly evaluated at the validation committee meetings and the necessary changes were made in line with expert opinions.

The findings of this study have a number of practical implications. The topics regarding the culture of the host country that were found to have attracted the international students' attention, and the problems they faced, can form the basis for further studies in this field. Websites developed to support international students in the future can be created in line with the findings of the study. In addition, in online content development involving a large number of participants, the working methods determined at the end of the action research process can be applied. The findings of this research will provide insights for experts who are developing online support systems for international students. More broadly,



transnational research involving international students living in various countries is also needed. This would enable the shared expectations of international students in different countries regarding online support systems to be determined. An online support system for the common needs of all international students could be developed in the future. In addition, there is also a need to better identify the particular issues and problems international students have in different countries, and to develop country-specific online support systems for these.

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**OZAN COŞKUNSERÇE**, PhD, is an Assistant Professor at Nevşehir Hacı Bektaş Veli University, Faculty of Education, Department of Computer Education and Instructional Technologies, Nevşehir, Turkey. His work focuses specifically on cultural adaptation of international students, technology culture interaction and integration, social networks in education, technology integration in science education and robot programming in education. [coskunserce@nevsehir.edu.tr](mailto:coskunserce@nevsehir.edu.tr)

**SUZAN DUYGU ERİŞTİ**, PhD, is a Professor at Anadolu University, Faculty of Education, Department of Fine Arts Education, Eskişehir, Turkey. Her work focuses specifically on art-based research methods, visual research methods, a/r/tography, technology-oriented arts education, multicultural arts education, graphic design, interactive instructional design and digital gamification and storytelling. [sdbedir@anadolu.edu.tr](mailto:sdbedir@anadolu.edu.tr)