BUEFAD | 2021, Volume 10, Issue 2, 358-377

Bartın University Journal of Faculty of Education

dergipark.org.tr/buefad

DOI: 10.14686/buefad.797154

The Investigation of Teacher Candidates' Learning Approaches and Engagement in a Hybrid Learning Environment According to RASE Model

Melike Özüdoğru [a*]

a* Dr., Faculty of Education, Manisa Celal Bayar University, Turkey (https://orcid.org/0000-0002-7478-3576) * mozudogru123@mailaddress.com

Research Article	Received: 18.09.2020	Revised: 26.05.2021	Accepted: 30.05.2021

Abstract

This study aimed to investigate whether teacher candidates' learning approaches and engagement levels predicted their achievement in the Curriculum Development course in a hybrid course in Turkey. This study was designed according to the RASE (Resources/Activity/Support/Evaluation) model. In this study, data were collected from 129 teacher candidates through the 'Learning Approaches Questionnaire' and 'Engagement Questionnaire'. The achievement scores of teacher candidates were obtained at the end of the semester according to their course grades. To answer the research question, the Multiple Linear Regression analysis was employed. The results of the study showed that while the deep learning approach of teacher candidates was significantly and positively related to engagement variables, the surface learning approach was related to engagement variables negatively. However, it was revealed that the surface learning approaches and behavioral engagement of teacher candidates significantly predicted the achievement in the hybrid Curriculum Development course. It can be concluded that the learning environment is important for learning outcomes. It can be suggested that besides providing different active learning opportunities, teacher candidates should be assessed by the level of applications conducted in the hybrid learning course to improve deep learning and all types of engagement levels.

Keywords: Agentic engagement, behavioral engagement, cognitive engagement, deep learning approach, surface learning

Hibrit Bir Öğrenme Ortamında Öğretmen Adaylarının Öğrenme Yaklaşımları ve Katılımlarının RASE Modeline Göre İncelenmesi

Öz

Bu çalışma, öğretmen adaylarının öğrenme yaklaşımlarının ve katılım düzeylerinin Türkiye'de hibrit olarak tasarlanan Eğitimde Program Geliştirme dersindeki başarılarını yordayıp yordamadığını araştırmayı amaçlamıştır. Bu çalışma RASE (Kaynaklar/Etkinlik/Destek/Değerlendirme) modeline göre tasarlanmıştır ve 129 öğretmen adayından 'Öğrenme Yaklaşımları Ölçeği" ve "Katılım Ölçeği" aracılığıyla veriler toplanmıştır. Öğretmen adaylarının başarı puanları ders notlarına göre yarıyıl sonunda alınmıştır. Araştırma sorusunu yanıtlamak için Çoklu Doğrusal Regresyon analizi kullanılmıştır. Araştırmanın sonuçları, öğretmen adaylarının derin öğrenme yaklaşımının katılım değişkenleri ile anlamlı ve pozitif yönde ilişkili, yüzeysel öğrenme yaklaşımının katılım değişkenleri ile negatif yönde ilişkili olduğunu göstermiştir. Ancak öğretmen adaylarının yüzeysel öğrenme yaklaşımları ve davranışsal katılımlarının Eğitimde Program Geliştirme dersindeki başarıyı önemli ölçüde yordadığı ortaya çıkmıştır. Öğrenme ortamının öğrenme çıktıları için önemli olduğu sonucuna varılmıştır. Öğretmen adaylarına farklı aktif öğrenme fırsatları sağlamanın yanı sıra, derin öğrenmeyi ve her türlü katılım düzeylerini geliştirmek için hibrit derslerde yapılan uygulamalar ile değerlendirme önerilebilir.

Anahtar kelimeler: Aracı katılım, davranışsal katılım, bilişsel katılım, derin öğrenme yaklaşımı, yüzeysel öğrenme

To cite this article in APA Style:

Özüdoğru, M. (2021). The investigation of teacher candidates' learning approaches and engagement in a hybrid learning environment according to RASE Model. *Bartın University Journal of Faculty of Education, 10*(2), 358-377. https://doi.org/10.1016/buefad.797154

1 | INTRODUCTION

In the 21st century, the economy demands more university graduates and self-improving workers. Many high school graduates are not accepted by universities but want to obtain a college degree to have better job opportunities. Besides, the professional life after university precludes many university graduates from participating in some programs or seminars to improve themselves more, which would provide them recognized qualifications (Baepler et al., 2014). In order to meet the needs of the economy and these learners, many universities, through the help of fast-growing computer-mediated communication and technology, design online learning program alternatives such as MOOCs (massive open online courses), flipped classrooms, and hybrid/blended learning (Zhou & Zhang, 2018). In this sense, many practitioners believe in hybrid learning (HL) complements the advantages of traditional and online learning to achieve optimal learning. According to HL, students can participate in some learning tasks via rich computer-mediated communication technologies even when they cannot physically be in classes. In this way, higher education courses and seminars become more accessible to a large number of people (Nieuwoudt, 2020; Tay, 2016; Zhou & Zhang, 2018).

Moore and Gilmartin, (2010) stated that the online part of HL allows learners to access the content whenever and wherever they want and the reduced amount of face-to-face lectures provide time for learners to search for topics by themselves or with their peers, rather than depending on the lecturer to provide all the answers in class. While HL allows students to have more time to prepare, participate in different in-class activities, and reflect on others' explanations in the online part, on the other hand, traditional instruction mostly provides insufficient time for students to search, frame their responses to the questions asked in class and synthesize their ideas, which often result in shallow, less critical contributions and surface learning (Baepler et al., 2014; Cheng & Chau, 2014). Zhou and Zhang (2018) stated that HL is one of the important directions of teaching reform and it is closely linked with the use of a deep learning approach. Ward (2019) expressed that HL is related to increased motivation and engagement in learning, and decreased off-task behaviors. Moreover, it provides individualized and self-directed learning opportunities in which learners can access learning materials at their convenience (Moore & Gilmartin, 2010; Tay, 2016). Additionally, Hara, Bonk, and Angeli (2000) stated that HL provides a permanent memory of learners' thoughts for reflection and debate. In this way, after posting comments, learners access them later as a model of expected answers. These posts can be used by instructors to identify discourse patterns and track the development of learners both within a single online discussion session as well as over extended periods.

In HL, as learners engaged in multiple and various in-class and online activities, learning is facilitated (Baepler, et al., 2014; Cheng & Chau, 2014; Nieuwoudt, 2020). Thanks to both online learning and face-to-face parts, learners have the opportunity to receive help and feedback from instructors and peers during the HL process to construct personal interpretation, which fosters engagement in tasks (Cheng & Chau, 2014; Redmond et al., 2014; So & Bonk, 2010). In other words, as learners engage in learning tasks more, their performance improves more in HL environments. Moreover, HL supports learners to manage the content through in-class group tasks and online discussions, thus promoting deep and meaningful learning. Learners' participation and engagement with course materials and tasks both in face-to-face and online parts in terms of the number of postings contribute to the learning process in a positive way (Cheng & Chau, 2014; Nieuwoudt, 2020).

Despite many advantages of the HL as stated previously, there are some disadvantages as well. For instance, the removal of time constraints may result in the procrastination of learners to complete tasks in a determined period which causes an overload of packed content to learn in a short time before the date of submission (Hara et al., 2000; Tay, 2016; Ward, 2019). In other words, easy access could also mean procrastination or less prioritization since online content is available somewhere. As a result, as stated in

Tay (2016)'s study, learners leave it there until they need to use it. These issues may result in a decrease in learners' behavioral, cognitive, emotional, and agentic engagement. However, Kuh (2009) stated engagement as one of the important factors for student learning. Moreover, as for the online part of HL, the limited inclusion of visual communication cues such as gestures, smiles, or tone of voice might result in the decrease of learners' emotional engagement. However, if students exhibit low engagement during the HL process, including in-class activities and online discussions, the advantages of HL mentioned previously might be less apparent (Hara et al., 2000). Moreover, the engagement of learners with academic activities at a low level was expressed as the main reason for dissatisfaction, negative experience, underachievement and dropping out of course (Finn & Rock, 1997; Fredricks, Blumenfeld, & Paris, 2004; Kuh, 2009; Skinner & Pitzer, 2012).

Moore and Gilmartin (2010) reflected on their experiences when they included traditional face-to-face teaching by saying that they felt the lack of encouragement and deep learning among learners which resulted in superficial engagement with ideas and concepts. However, when they included an online learning environment using Blackboard to provide resources to students, they also felt that the structure of online courses prevented deep learning in which learners experienced very few opportunities for interlinking or cross-referencing information. The findings of their study revealed the disconnection between the content outcomes, which in turn showed the necessity of integrating face-to-face classes with online learning settings to achieve the optimal learning that will enable learners to become highly engaged and achieve deep learning.

Besides, although HL has been increasingly included in the teaching-learning process, the changes in pedagogies implemented in HL have been limited. It was revealed that many HL courses focus on content delivery through PowerPoint presentations (So & Bonk, 2010). However, simply turning the classroom presentations into online presentations or the inclusion of innovative digital technologies without providing students quality instruction along with the higher emotional, behavioral, cognitive, emotional and agentic engagement in different activities as also stated by Lim and Morris (2009), may result in students' procrastination of learning and decrease in their motivation to get prepared for the course, read online posts and taking part in-class activities. For this reason, to eliminate the unfavorable effects of HL, it is essential to provide learners with successful designs to initiate deep learning as well as increase their engagement in purposeful effective HL environments. In the current study, the RASE (Resources/Activity/Support/Evaluation) model has been integrated. This model includes both active applications through the use of technology and student-centered active instruction to help instructors design more effective courses to enable TC to obtain increased engagement, deep learning, and achievement. It can be seen that learning approaches and learner engagement are some of the variables that should be investigated in HL environments. Moreover, Bedenlier et al. (2020) revealed the results of their systematic review study including 42 peer-reviewed arts and humanities articles indexed in four international databases, and found that majority of research related to engagement of learners has been conducted in language learning. For the aforementioned reasons, in this study, the aim was to redesign an educational sciences course, Curriculum Development, to enhance the engagement and learning of TC. Also, the learning approaches and engagement levels of teacher candidates (TC) have not been investigated comprehensively in HL environments in Turkey. This current study also aimed to address this important gap.

Learning Approaches

In the literature, deep and surface learning approaches have been examined in different courses and grade levels (Biggs, 1991; Biggs & Tang, 2007; Cope & Staehr, 2005; Dolmans et al., 2016; Entwistle & Entwistle, 1991; Gordon & Debus, 2002; Wilson & Fowler, 2005). Learners who adopt deep learning approaches learn critically without accepting everything as correct when they are presented, find evidence by using reliable resources, extract their understanding, link new ideas and concepts to previous ones (Biggs, 1991; Dolmans et al., 2016; Entwistle & Entwistle, 1991). For this reason, they exhibit more

engagement and interest in learning activities (Floyd et al., 2009). Furthermore, as reported in the literature, deep learners use learning strategies, monitor, and reorganize their learning process by following the feedback from other students (Biggs & Tang, 2007; Cope & Staehr, 2005; Entwistle & Entwistle, 1991).

On the contrary, surface learners prefer low levels of cognitive activities and want to make the minimum effort to fulfill a task (Gordon & Debus, 2002). For this reason, they tend to memorize the details of information and accept new concepts and ideas without offering interpretation, justification, or criticizing them (Biggs et al., 2001; Dolmans et al., 2016; Entwistle & Entwistle, 1991; Loyens et al., 2013; Redmond et al., 2014).

It is accepted that deep learning approaches lead to the achievement of high-quality educational outcomes, learning, and engagement (Biggs, 1991). While deep learners reflected at higher critical thinking stages, those who accepted the surface learning approach reflected mostly at the starting stage of reflective thinking (Leung & Kember, 2003). The results of many studies showed that deep learners obtained higher academic achievement, grade point average (GPA), or self-rated academic progress than surface learners (Buckley et al., 2010; Cope & Staehr, 2005; Loyens et al., 2013; Nieuwoudt, 2020; Minbashian et al., 2004).

In the literature, it was revealed that even though learners have a general predisposition for either a deep or surface approach for learning, their learning approaches were influenced by the contextual situations (Ilhan-Beyaztas & Senemoglu, 2015). While learners who perceived the learning environment favorable in terms of learning goals and teaching-learning processes promoted the use of deep learning approach and the others who perceived heavy workload and inappropriate assessment caused the initiation of surface learning (Wilson & Fowler, 2005). Similarly, Cope and Staehr (2005) found a statistically significant increase in the ratio of students' deep learning usage in the fifth year of their study since their workload in terms of the course content were gradually decreased each year, and much more students perceived that they had enough time to apply deep learning approaches. Also, learners use surface learning approaches when the perceived value of the course is low. On the contrary, deep learning strategies are applied when learners perceived the value of the course content high and engaged in the learning process (Floyd et al., 2009).

The association between students' learning approach preferences and curriculum designs was revealed (Dolmans, et al., 2016). Zhou and Zhang (2018) stated that both traditional classroom teaching and instruction including only online learning, mostly result in a simple mechanical rote learning and the use of surface learning approach which seriously prevents learners' deep understanding of knowledge and the development of higher-order thinking skills such as critical thinking, problem-solving, and innovative thinking. On the other hand, deep learning is accepted as one of the talents approved in the training of 21st-century learners. Therefore, it is of great importance to promoting deep learning of learners in contexts that are combined with face-to-face and online parts. In the literature, it was stated that developing deep learning approaches is claimed to enhance students' engagement with their subject and vice versa (Floyd et al., 2009). Hence, this study investigated the associations among learning approaches and engagement levels of TC in an HL environment by providing a flexible learning environment in terms of learning time and place.

Learner Engagement

The multifaceted, complicated, dynamic, and context-dependent nature of engagement was defined in many ways (Ben-Eliyahu et al., 2018; Kuh, 2009; Steen-Utheim & Foldnes, 2018). The engagement of learners was explained in a continuum from disengagement to engagement (Xerri et al., 2017). Formerly, it was described through observable behaviors such as participation in academic, social, or extracurricular activities (Ben-Eliyahu, et al., 2018; Bowden et al., 2019; Finn & Rock, 1997; Reeve, 2013; Reeve & Tseng, 2011). In learning environments, including an online part, engagement was linked to time spent on a

webpage or duration of eye-screening and willingness to interact with other learners and instructors to solve issues related to the course (Henrie et al., 2015). It is also defined as the energy and effort that learners make during the learning process, which is observable through several behavioral, cognitive, or affective indicators (Bedenlier et al., 2020; Bond, et al., 2020; Skinner & Pitzer, 2012). Reeve and Tseng (2011) explained that engagement included four different dimensions: behavioral, emotional, cognitive, and agentic.

Learners' behavioral engagement is about their satisfaction, persistence, and achievement in time-on tasks and teaching practices (Jamaludin & Osman, 2014; Kahu, 2013; Kuh, 2009). Also, it includes different observable actions such as asking questions, doing school work, and contributing to class discussions (Connell, Spencer, & Aber, 1994; Finn & Rock, 1997; Skinner & Belmont, 1993). The results of some studies have revealed a positive correlation between behavioral engagement and achievement (Connell, Spencer, & Aber, 1994; Marks, 2000). Henrie et al. (2015) also showed that 77% of the reviewed articles included the indicators of behavioral engagement such as the number of participation, assignments completed, frequency of log-in sessions, and other on-task behaviors. It can be stated that as TC participated more, they obtained higher grades since they took part in activities conducted in class and online part of the course and tried to complete their responsibilities well, which was corroborated in the literature (Connell et al., 1994; Marks, 2000; Reeve, 2013; Reeve & Tseng, 2011). In the study conducted by Bond et al. (2020), behavioral engagement was explained as the most frequently reported dimension of engagement, which included participation in learning tasks, interaction with peers and the instructor, and involvement in different learning activities.

Emotional engagement encompasses positive and negative reactions in the teaching-learning process. Emotionally engaged learners show positive feelings like interest, enthusiasm, and enjoyment towards the courses, subjects, tasks, and learning process rather than anxiety, anger, or apathy (Skinner & Belmont, 1993). Besides, Bowden et al. (2019) added that positive emotions were also correlated with behavioral engagement. Bond et al. (2020) revealed that emotional engagement was at the highest level when learners interacted with their peers and the instructor, and when synchronous collaboration tools were included in the online part of learning. There is not sufficient research about the emotional engagement and achievement of learners (Fredricks et al., 2004). While some studies showed correlations among achievement, emotional and behavioral engagement (Connell et al, 1994; Jamaludin & Osman, 2014; Reeve, 2013), they are not enough to allow an examination of the unique contribution of emotional engagement on academic outcomes as a result of combining different types of engagement.

Cognitively engaged learners think strategically, self-regulate their learning processes by planning, organizing, monitoring and evaluating their learning, try to master the knowledge by using different strategies such as the rehearsal, summarizing and elaboration (Pintrich & De Groot, 1990; Reeve & Tseng, 2011; Zimmerman, 1990). Learners who use deep learning strategies are engaged more cognitively, exert more mental effort, create more connections among ideas, so they achieve a greater understanding of ideas (Floyd et al., 2009). The relationship between achievement and one aspect of cognitive engagement-strategy use has been documented (Fredricks et al., 2004).

Finally, agentic engagement is about learners' proactive and constructive contributions during instruction by explaining what they prefer via asking questions, communicating with teachers by making suggestions, expressing their thoughts, level of expressed interests or requesting a demand and assistance through feedback, recommending a goal or objective, and so on (Jamaludin & Osman, 2014; Reeve & Tseng, 2011). Therefore, it can be said that agentic engagement encourages learners to look for opportunities to increase their interest in the lesson and enrich the instruction rather than just passively receiving as it is given.

It was stated that engagement functions as a student-initiated pathway to important outcomes such as skill development, academic progress, retention, achievement and institutional performance (Cheng, & Chau, 2014; Connell et al., 1994; Jamaludin & Osman, 2014; Kahu, 2013; Kuh, 2009; Marks, 2000; Reeve,

2013; Skinner & Pitzer, 2012; Steen-Utheim & Foldnes, 2018). Similarly, Collaço (2017) expressed that high levels of student engagement positively contributed to GPA and students' perception of their overall academic experience. The correlation between engagement types and achievement varies depending on how achievement is assessed. While behavioral engagement is likely to be associated with teacher grades and scores on tests, the links with cognitive engagement are more likely to become obvious when tests measure synthesis, analysis, and deep-level understanding of content (Fredricks et al., 2004) which make it difficult to draw firm conclusions confirming that engagement positively influences achievement. The results of some studies showed that while behavioral engagement predicted the achievement (Bond et al., 2020; Bowden et al., 2019; Henrie et al., 2015; Marks, 2000; Reeve, 2013; Reeve & Tseng, 2011; Skinner & Pitzer, 2012), this was not true for either emotional engagement or cognitive engagement (Ben-Eliyahu et al., 2018; Bowden et al., 2019; Marks, 2000; Reeve, 2013). In addition, Jamaludin & Osman (2014) demonstrated emotional engagement as one of the important factors when compared to other types of engagement for achieving active learning in a flipped learning environment which is a type of blended learning. However, Bedenlier et al. (2020) expressed emotional engagement as the least observed dimension in their systematic review study. Moreover, the results of studies revealed that that deep learners engaged in courses and obtained higher academic achievement than surface learners (Cope & Staehr, 2005; Minbashian, et al., 2004; Nieuwoudt, 2020). The results of some studies revealed an insignificant relationship between the deep learning approach and academic achievement (Duff, Boyle, Dunleavy & Ferguson, 2004; McParland et al., 2004). Although Ke and Xie (2009) found that around 87% of the adult participants obtained higher scores in the deep approach dimension than in the surface approach dimension, the content analysis of online discussions mostly reflected the surface learning approach. It can be seen that the findings of the studies about the effectiveness of learning approaches in terms of engagement, learning, and achievement are not clear. It can be said that the relationship between engagement and achievement is still an issue open to discussions. Also, knowing the fact that there are differences between the learning approaches and engagement of TC and the discovery of these differences can help instructors to design the instruction effectively, and to reach more qualified learning outcomes. For this reason, the current study aimed to better understand the learning approaches and engagement levels of TC in an HL environment. To achieve this aim, the following research question was proposed:

How well the learning approaches and engagement levels of TC in the Curriculum Development Course predict their achievement?

2 | Method

This study was conducted in the Curriculum Development course which is an elective course at a public university in Turkey.

Participants of the Study

Data were collected from 129 TC according to the purposive sampling method (Cohen et al., 2007; Creswell, 2012). Among the 129 TC, 88 (68.2%) of them were female and 41 (31.8%) of them were male and 39 (30.2%) of them from Psychological Counselling and Guidance Department; 20 (15.5%) of them from Elementary School Mathematics Teaching Department; 21 (16.3%) of them from Turkish Language Teaching Department; 22 (17.1%) of them from Social Sciences Teaching Department and 27 (20.9%) of them from Classroom Teaching Department.

HL Process

In this study, the RASE (Resources, Activity, Support, and Evaluation) model was implemented as shown in Figure 1. It was based on different theoretical concepts such as constructivist learning environments,

engaged learning, active learning, technology-based learning environments, interactive learning environments, collaborative learning, etc. (Churchill et al. 2013). The focus of the model is the content and the resources which were included during instruction but seem not quite sufficient to fully achieve learning outcomes. According to this model, instructors are expected to include active learning approaches such as experiments, case based-learning, problem-solving to achieve learning outcomes, and provide help and support whenever learners need it. The support may come from both instructors through the use of technological tools or from peers in collaboration with other students to solve arising difficulties. Finally, learners should be guided about their progress and ensure that learning outcomes are being achieved through formative and summative evaluation.

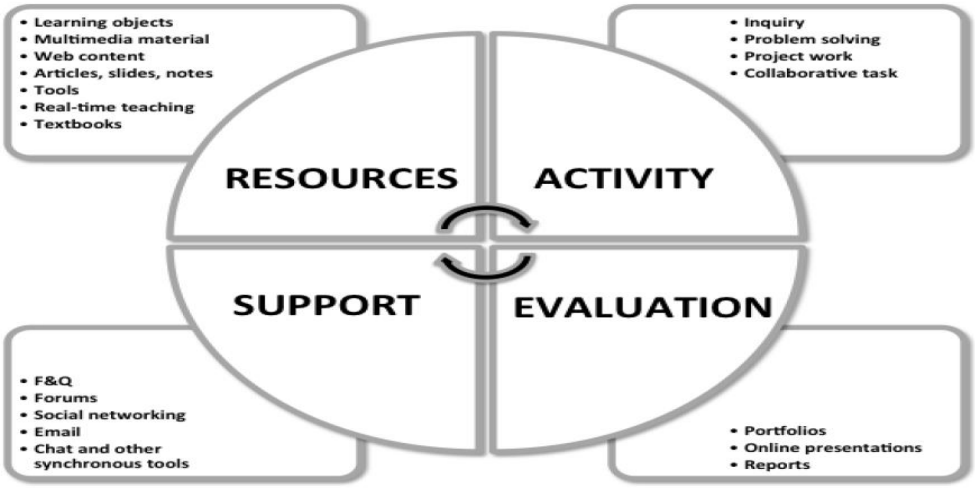

Figure 1. *Figure 1. RASE model (Churchill et al., 2013).*

In this study, textbooks, PowerPoint slides, real-time teaching, and online discussion forums were included as resources. As for the activity dimension, authentic cases where students discussed and reflected on real-life scenarios, daily news, or ill-defined cases were chosen. Moreover, TC prepared a sample lesson plan after learning the topics of the course. Weekly reflections of TC were evaluated so that they can receive timely feedback to reflect on and take further actions towards achieving more coherent learning outcomes. In this process, TC were provided with support and feedback from both their peers and instructors. While providing support is decreasing the course workload and increasing deep learning, behavioral, cognitive, emotional, and agentic engagement was aimed since effective instruction can be provided in this way. Finally, TC were evaluated according to their weekly reflections, the quality of lesson plans, and the final exam. The summary of procedures conducted during the HL process was shown in Table 1.

Table 1. The Procedures Conducted during the HL Process to improve Deep Learning and Engagement

Deep Learning	Behavioral engagement	Emotional engagement	Cognitive engagement	Agentic engagement
Participation in asynchronous Edmodo discussions	Participation in class activities and asynchronous Edmodo discussions	Positive relations with the instructor and peers	Meaningful contribution to asynchronous Edmodo discussions	Requesting help or feedback from peers and instructor
Asking thought-provoking questions during online discussions	Number of quality posts	Willingness and interest to participate in online and class discussions	Asking thought-provoking questions during discussions	Expressing a preference or making a suggestion
Preparation of a sample lesson plan	Responding to peers' ideas	Satisfaction with course tasks	Preparation of a sample lesson plan	Contribution to online discussions or seeking clarification
Taking part in the question-answer part in the classroom	Asking questions to peers and instructor related to course issues	Feeling the sense of belongingness to online community	Learning from peers through online discussions and group activities	Express their ideas, thoughts and needs
Participation in cooperative learning activities in the classroom		Taking responsibility for learning towards one another in both online and in-class part of the HL	The use of deep learning approaches-such as reflective and critical thinking	Recommending a goal or objective to be pursued
Reflecting on posts critically		Enthusiasm	Self-regulation of study habits	Communicate likes and dislikes
Searching for the content in many resources			On task attention	

In the current study, during the face-to-face part of the course, instructor presentations and the question-answer part were included besides cooperative learning activities. TC formed learning groups spontaneously which included 4-6 members, and they usually worked semi-autonomously but supervised by the instructor. In this way, it was thought that this group learning process might contribute to the fostering of the use of a deep learning approach and increase the behavioral, cognitive, emotional, and agentic engagement of TC.

Moreover, class time also included online question-answer plays, Kahoot, to check whether TC learned the basics of each topic. Each play included 6-7 questions as shown in Figure 2. At the end of the face-to-face part of the course, TC were informed about the discussion topic of the week and directed to online discussions which were to be completed after class time. In other words, they learned the topic during the face-to-face part of the course and then they practiced their learning through online discussions.

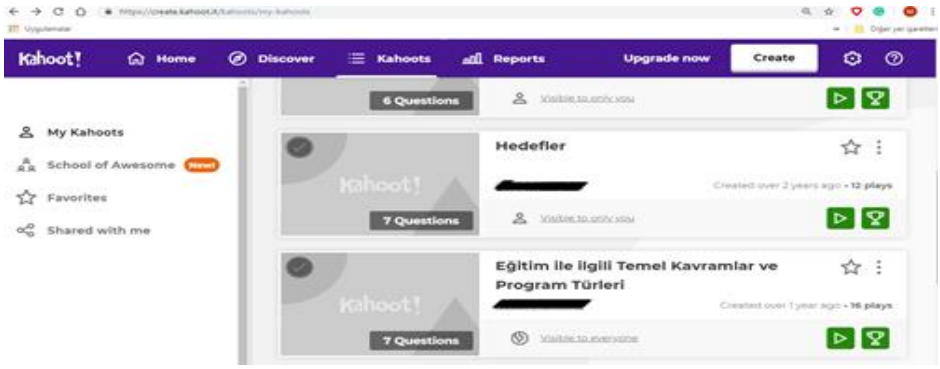

Figure 2. *Kahoot application*

Out of class time, TC were expected to take part in asynchronous Edmodo discussions as shown in Figure 3. Some researchers stated that due to digital technologies, especially the existence of discussion forums, the behavioral engagement of learners has increased (Bond, et al., 2020). Also, behavioral and cognitive engagement of TC aimed to be enhanced through active learning opportunities which included asking thought-provoking questions during Edmodo discussions. Besides, Redmond et al. (2014) explained that discussing cases, open-ended questions, or problems was important to promote deep and meaningful learning in HL environments. Moreover, by designing a caring environment and providing TC with communication opportunities both among their peers and also with their instructor, an increase in emotional and agentic engagement was aimed.

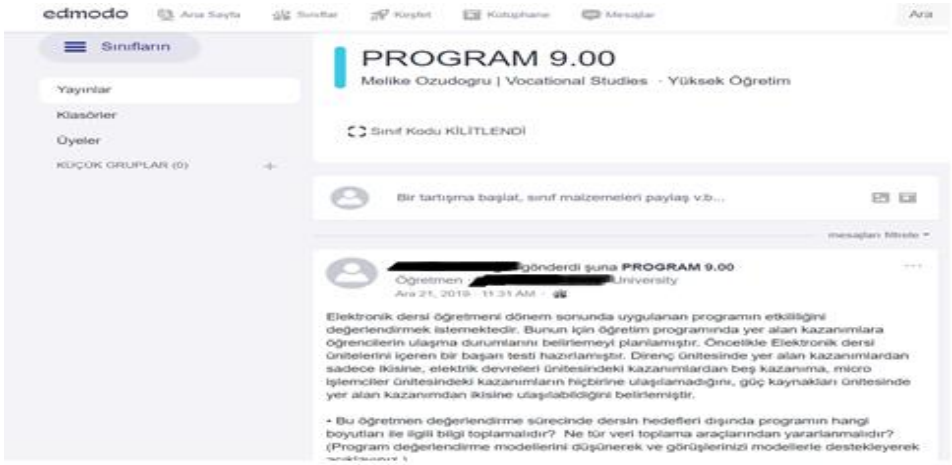

Figure 3. *Asynchronous Edmodo discussions group*

Besides, many studies have found associations between the learning approaches and course grades in online discussions (Buckley et al., 2010). Hence, TC discussed cases that reflected real-life classroom events or news related to the course topic (see Appendix 1). In this way, they obtained the opportunity to talk and discuss the planning of instruction, basics of curriculum development, needs assessment techniques, content organization, variables for the effective teaching-learning process, curriculum evaluation types, etc. TC were expected to share their ideas with other students, take responsibility towards one another in both the online learning and in-class part of HL, which in turn expected to increase their emotional engagement levels and motivate them to complete the tasks.

Furthermore, as stated by Handelsman et al. (2005), class materials are some of the components that represent student emotional engagement; thus, in the current study, the discussion board, Edmodo, included properties to increase emotional engagement, such as the like button, which is thought to contribute to learning. Moreover, the instructor supported TC during both face-to-face and online learning tasks through feedback and helped them to learn from their mistakes apart from peer collaboration to support cognitive and agentic engagement. Also, agentic engagement was fostered through various forms of communication such as private conversations conducted between TC and the instructor through the

online discussion board, Edmodo, as stated by Reeve (2013). Moreover, TC were allowed to contribute to both in-class and online discussions by expressing their preferences, ideas, thoughts, likes, dislikes, needs, and making suggestions, recommending the instructor a goal or objective to be pursued, as well as requesting assistance in terms of solving problems.

Data Collection Process and Materials

This study was conducted in the 2019 fall semester after obtaining Institutional Ethics Committee permission. Although the operating course time was 10 weeks (except orientation week, two-week midterm exams, and national holidays), the HL was carried out for six weeks at a public university in Turkey. In this study, data were collected through the 'Learning Approaches Questionnaire' and 'Engagement Questionnaire', which were explained below. The achievement scores of TC were obtained at the end of the semester according to their course grades.

The results of many studies showed that the number of posts made a significant direct contribution to the final mark in different courses (Nieuwoudt, 2020). Redmond, et al. (2014) stated that when the online discussion posts were directly or indirectly related to the assessment process, it was more likely to increase the interaction and engagement of learners in the online discussion forums. This will in turn increase learning. Hence, TC were awarded 30% of their course grade for the quality and quantity of their postings on Edmodo. The number of postings of PsT was obtained from Edmodo system logs, and course grades were obtained from the instructor. The instructor conducted a final exam which was a multiple-choice test including the goals and objectives at the knowledge, and comprehension levels according to Bloom's Taxonomy. Course grades of TC varied from 0 to 100. Altogether, TC posted 1547 times during those six weeks. This total posting number comes from four different classes. The Edmodo contributions consisted of 435 posts (class 1), 371 posts (class 2), 218 posts (class 3), and 523 posts (class 4). Furthermore, while 20% of the course grades were awarded for the effectiveness of TC's sample lesson plans, which were evaluated using a rubric, and 50% of their grades were awarded for the final exam, which was implemented by the course instructor.

Learning Approaches Questionnaire

The Learning Approaches Questionnaire was used to investigate the learning approaches of TC. The questionnaire was developed by Biggs, et al. (2001) and adapted to the Turkish by Onder and Besoluk (2010). It is a Likert-type 5-point (from always to never) questionnaire comprised of 20 items in two different factors (deep learning and surface learning). While the reliability coefficient of the deep learning dimension is .78, the surface learning dimension is .74.

Engagement Questionnaire

The 'Engagement Questionnaire (EQ)' was developed by Reeve & Tseng (2011) and used to assess student engagement in terms of behavioral, emotional, cognitive, and agentic dimensions. In this study, a five-point-Likert type self-report instrument with 22 items was implemented after conducting its adaptation studies. The adaptation study of the scale was conducted by Ucar and Sungur (2018) for middle school science students. In this adaptation, the items included the "in science class" statement which was added after each item. However, in this study, the participants were TC. Therefore, a new adaptation study was conducted.

For the confirmatory factor analysis of the scale, 385 sophomore TC who took the Curriculum Development course in the fall semester of 2019-2020 education year from two state universities in Turkey were included. Among these 385 TC, 259 (67.3 %) of them were female and 123 (31.9%) of them were male.

AMOS 24.0 maximum likelihood calculation was used to test whether the model is suitable for the data. CFA proposed the following model fit indices: The chi-square value ($\chi 2/df$=531.38/200= 2.66; p=.000) showed the fitness of the model to the data (Hair et al., 2014). *CFI*= .93; *NFI*= .90; *RFI*= .87, *IFI*= .93, *AIC*= 681.38, *ECVI*= 1.77 and RMSEA=.06. The standardized path coefficients ranged from 0.58 for item 20 to 0.85 for item 8.

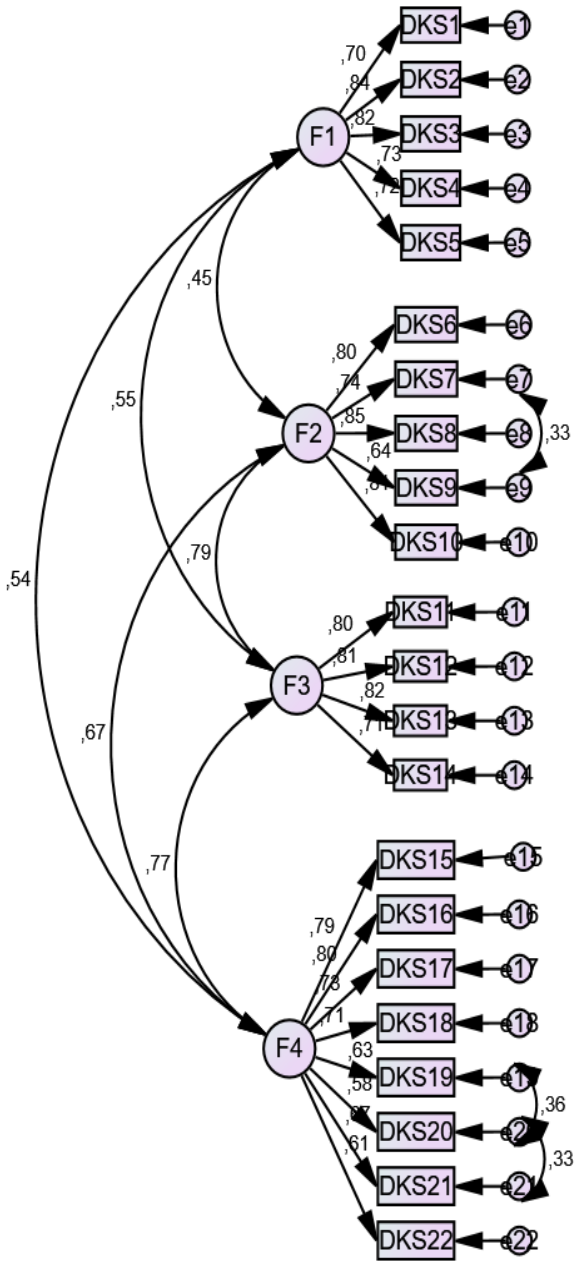

Figure 4. *Standardized path coefficients for the four-factor model of engagement questionnaire.*

Finally, as shown in Figure 4, the EQ consisted of four factors. The reliability coefficients across the factors of the scale were shown in Table 2, which showed adequate internal consistency (Hair et al., 2014). As a total, the reliability coefficient of Cronbach's alpha was found .93.

Table 2. The Item Numbers, Reliability Coefficients across the Factors of the Engagement Questionnaire

Factors-Sub-Scales	Item Numbers	Reliability Coefficients
Agentic Engagement	1, 2, 3, 4, 5	.87
Behavioral Engagement	6, 7, 8, 9, 10	.88
Emotional Engagement	11, 12, 13, 14	.86
Cognitive Engagement	15, 16, 17, 18, 19, 20, 21, 22	.89

Data Analysis

To answer the first research question, the Multiple Linear Regression (MLR) analysis was employed (Field, 2009; Tabachnick & Fidell, 2007). In this study, firstly, the assumptions of MLR were checked to ensure there is no violation of the assumptions of normality, linearity, homoscedasticity, multicollinearity, and influential observations. It was seen that none of the cases had undue influence over the regression parameter. Then, descriptive statistics, correlations among variables as well as regression parameters were revealed. The alpha level was determined as .05 as stated by Field (2009) and analyses were conducted using the SPSS 22.

3 | Findings

In order to answer the research question, the Multiple Linear Regression (MLR) analysis was employed. In this sense, firstly, the correlations among variables were investigated and presented in Table 3.

Table 3. The Correlations and Descriptive Statistics among Achievement and Predictor Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Course grade (1)	1.00						
Deep Learning (2)	.09	1.00					
Surface Learning (3)	-.27***	-.22**	1.00				
Agentic Engagement (4)	.19*	.47***	-.038	1.00			
Behavioral Engagement (5)	.24**	.66***	-.30***	.36***	1.00		
Emotional Engagement (6)	.09	.75***	-.33***	.45***	.69***	1.00	
Cognitive Engagement (7)	.17*	.67***	-.17*	.55***	.56***	.71***	1.00
Mean	72.50	33.85	26.78	17.63	18.71	14.84	29.85
SD	9.21	5.68	5.88	3.69	3.12	2.78	4.64

* p < .05, ** p < .01, *** p < .001.

In this study, the outcome variable was academic achievement, while the learning approaches and types of engagement were predictor variables. According to Table 2, the correlation between academic achievement and surface learning was *r*= -.27, behavioral engagement was *r*= .24, agentic engagement was r= .19, and cognitive engagement was *r*= .17. The highest correlation was between emotional engagement and deep learning (*r*= .75). All engagement variables were significantly (moderately or highly) related to other engagement variables. Moreover, while the deep learning approach of TC was significantly and positively related to engagement variables, the surface learning approach of TC was negatively related to engagement variables. It can be seen in Table 4, all predictors were entered into the model to test whether the model was significantly better at predicting the outcome.

Table 4. Summary of Multiple Hierarchical Regression Analysis for Variables Predicting the Course Achievement of TC in an HL Environment

	B	*SE B*	*β*	*t*	Sr^2	R^2	*ΔF*
	72.23	7.51		9.62***		.16	3.98***
Deep Learning	-.23	.22	-.14	-1.02	-.09		
Surface Learning	-.43	.14	-.27	-3.04**	-.25		
Agentic Engagement	.45	.25	.18	1.80	.15		
Behavioral Engagement	.88	.36	.30	2.48*	.21		
Emotional Engagement	-.95	.50	-.29	-1.92	-.16		
Cognitive Engagement	.30	.26	.15	1.17	.10		

* p < .05, ** p < .01, *** p < .001.

In order to test whether the model was significantly better at predicting the outcome, F-ratio was checked (Field, 2009) and it was found F (6, 122) = 3.98 (p<.001). It can be said that the model was significant in predicting the outcome variable. As shown in Table 3, the variables explained 16% of the variance in academic achievement. When the t-statistics were checked to control whether the predictor variables contributing to the model significantly as suggested by Field (2009), it was found that surface learning t(122)=-3.04, p< .003 and behavioral engagement t(122)=2.48, p< .01 significantly predicted the achievement of TC in a hybrid Curriculum Development course. In other words, it can be said that when TC tended to use surface learning approaches more, their achievement decreased. Also, when TC behaviorally engaged in the learning process in this hybrid course, such as posting on the Edmodo or class discussions, their achievement increased more.

4 | Discussion

In the current study, it was revealed that the surface learning approaches of TC significantly predicted the achievement in the hybrid Curriculum Development course. According to results, surface learning was negatively related to achievement (Buckley, et al., 2010; Cope & Staehr, 2005; Ekinci, 2009; Minbashian, et al., 2004). It can be deduced that the more TC preferred surface learning approaches, the lower their achievement. According to the results of the study, some of the TC might have made a minimum effort, applied low levels of cognitive strategies, especially during the online discussions to fulfill their responsibilities, which might have decreased their course achievement. As Dolmans et al. (2016) also stated, instead of learning critically, linking new ideas and concepts, and associating new knowledge with previous knowledge, TC may have completed their tasks in class and online case discussions by copying and pasting from the internet or textbooks just to have good grades or memorize some part of the knowledge to pass the final exam, which in turn might have affected their deep learning levels. It was stated by Zhou & Zhang (2018) that while surface learners tend to memorize and understand mechanically, deep learners try to understand the content according to Bloom's high-level educational goals with an emphasis on analysis, synthesis, and evaluation. This study revealed that TC mostly didn't dwell on their understanding of learning to critically learning new content and integrating new knowledge into the original cognitive structure, as it is emphasized by deep learning.

Another reason for this result might be due to time problems and workload caused by other projects. For these reasons, some TC might not have participated willingly in in-class and online discussions due to perceived workload as also mentioned in the literature (Cope & Staehr, 2005; Tay, 2016; Xerri, et al.,

2017). Similarly, Zheng & Guo (2019) explained that learning behaviors of deep and surface learners are not completely different in HL environments, and some essential differences were reflected during the active behaviors in class, the interactional editing behaviors on the learning platform, and the meaning negotiation on cognitive aspects of the course. Besides workload, some of the students might have felt that memorizing the material was important to demonstrate their understanding to maximize exam grades, as also revealed in the study conducted by Entwistle and Entwistle (1991) which included students from the Psychology, Zoology, Biochemistry, Accountant, and Medicine Departments of Edinburgh and Oxford Universities. In this way, the surface learning approaches of TC significantly predicted their achievement in the hybrid Curriculum Development course.

Besides, the reason why the deep learning approaches of TC did not predict their achievement, may be related to the exam type. In the literature, many studies found no significant correlations between the learning approaches (deep and surface) and measures of academic performance which were assessed through multiple choice exams (Loyens et al., 2013). Wilson and Fowler (2005) stated that whether the use of a deep learning approach leads to learning becoming less clear because of the moderating effect of the assessment choice involved. Learners may change their learning approaches from the surface to deep or vice versa to suit the assessment demands of their courses. Minbashian, et al. (2004) found that an increase from low levels to moderate levels of deep approach use of psychology students was associated with greater reproduction of information during the exam. As a result, it can be concluded that, if the assessment processes of the course included essay-type open-ended questions requiring TC to reflect on, consolidate, relate and communicate ideas rather than just answering multiple-choice exams, the use of the deep learning approach might have predicted the achievement of TC.

Also, the implementation period of HL might be short, which might also be one of the reasons that a deep approach did not predict their course achievement. As stated by Colak (2015), learning approaches cannot be changed by implementing them through short-term activities, especially in the context of an education system based on traditional exams. Similarly, Gordon and Debus (2002) included self-monitoring and goal-setting applications and repeatedly challenged TC to examine their learning approaches in their longitudinal study to facilitate their shift from surface learning approaches to deep approaches starting from enrolment to graduation. They reported a reduction in the reported surface approaches and a delayed increase in the deep learning approaches. Besides, Dolmans, et al. (2016) stated that curriculum-wide implementation has a more positive impact on students' deep approach compared to a single course implementation. It can be concluded that by taking into consideration the results of these studies, the short-time, single course applications may not be effective for changing students' approaches to learning from the surface to deep.

According to results, behavioral engagement predicted the achievement of TC, which was revealed by many studies (Bond, et al., 2020; Bowden et al., 2019; Henrie, et al., 2015). It can be stated that as TC participated more, they obtained higher grades since they took part in activities conducted in class and online part of the course and tried to fulfill their responsibilities successfully, which was corroborated in the literature (Bedenlier et al., 2020; Bond et al., 2020; Marks, 2000; Reeve, 2013). Besides, as stated in the literature, curriculum design and task characteristics might have influenced the behavioral engagement of TC. Similarly, Fredricks et al. (2004) and Skinner and Pitzer (2012) stated that engagement increases in contexts where the tasks are authentic, there are opportunities for collaboration, the use of diverse talents is present, opportunities for learners to conceptualize, execute, and evaluate their understanding are provided. In this way, learners consider that the content or tasks to be completed are meaningful, valuable, and worthy of their effort, which in turn increases all types of learner engagement. In the study conducted by Tay (2016), teacher participants stated that they recalled what they had watched in the animated videos. They explained how animated videos helped, made the concepts simpler and easier to follow in comparison to longer PowerPoint presentations which were less engaging. For this reason, in the current study, the

design of HL and the activities conducted both in the class and online part might have influenced the behavioral engagement of TC positively.

In the current study, agentic, emotional, and cognitive engagement of TC did not predict the achievement. Different from the current study, in the study conducted by Yang (2011), the results of the study revealed that Freshman English learners' engagement is enhanced through the interactions between learners and instructors in a situated learning environment. While through synchronous and asynchronous communication, the learners exhibited emotional engagement in expressing their thoughts and opinions regarding the drama in the discussions, they cognitively engaged in acquiring knowledge of English vocabulary and sentences with the help of scaffoldings. They also used deep thinking strategies when their essays were revised. However, the reason for the findings of the current study, as expressed by Ben-Eliyahu, et al. (2018) while learners might be behaviorally active, take part in tasks or conduct the course responsibilities, they might not be cognitively or emotionally engaged in the tasks. This could have resulted from TC's lack of enthusiasm, enthusiasm, and enjoyment for the course topics, online discussion cases, course tasks, and learning process, which could have affected their emotional engagement. In terms of emotional engagement, Tay (2016) also revealed that less positive emotional engagement of TC is observed due to some technical problems including the painful access to the discussion forum. In the current study, such kinds of technical issues or slow internet speed might have also affected the emotional engagement levels of TC. In parallel to the expressions of Bedenlier et al. (2020), in the current study, TC might have felt lower emotional and cognitive engagement due to workload that stemmed from both the face-to-face classroom environment and online environment where they had to spend much more time to learn the content. Moreover, the amount of instructor feedback as well as the postings of others might be perceived as not enough, as well as untimely, and might have resulted in weak emotional engagement. Also, Henrie et al. (2015) found that while emotional engagement is considered important to measure at the K12 level, it becomes less effective as students get mature. Yet, emotions do not cease while being critical to learning considering the learners in university and they influence a broad variety of cognitive processes that contribute to learning, such as perception, attention, memory, decision making, and cognitive problem-solving. Skinner and Pitzer (2012) stressed the importance of emotional engagement as a crucial variable that fosters behavioral and cognitive engagement to cultivate high-quality learning.

Moreover, another reason for the findings of the current study might be that TC may not find the instruction cognitively challenging, as also stated by Marks (2000). Moreover, as stressed by Skinner and Pitzer (2012), cognitive engagement encompasses attention, concentration, focus, absorption,, and a willingness to go beyond what is required; however, as explained previously, TC mostly preferred surface learning, memorization and receiving knowledge passively just as presented to them instead of thinking critically, asking questions to peers and the instructor, or demanding explanations from them, which might have also affected their cognitive and agentic engagement negatively. In addition, Henrie et al (2015) stated that cognitive engagement is about the use of cognitive strategy such as studying course material in-depth, inserting self-regulatory or meta-cognitive strategies such as planning, and seeking the information at appropriate places and doing extra work beyond what was presented by the instructor. Furthermore, according to Kuh (2009), engagement was the amount of time and effort that learners devoted to activities; however, if this spared time was not used effectively, it may not be linked to expected learner outcomes.

5 | Conclusion Suggestions

It can be concluded that the learning environment is important for learning outcomes, students' preference for learning approaches, and engagement levels. The way instructors structure the teaching-learning context and learning conditions, directs the nature of the relationship between learners, context, and tasks. Learners who normally select some parts of learning material and memorize them, find out that this strategy will not work in active learning environments, so use deep learning approaches. On the other hand, learners, who normally interact deeply, may decide to utilize a surface learning approach in a module

that is overloaded with content and assessed by the multiple-choice type or close-ended questions. Moreover, it can be suggested that besides providing different active learning opportunities, TC should be assessed by the level of applications conducted in the HL course to improve deep learning and all types of engagement levels. In other words, while TC took part in online discussions, reflected on the course content, thought critically and prepared sample lesson plans which require higher cognitive skills such as analysis and synthesis, they were assessed through an instructor-prepared multiple-choice type final exam, which mostly included knowledge and comprehension type questions. In these assessment methods, they might have used surface learning approaches to memorize some terms and concepts related to curriculum development course rather than deep learning approaches requiring the grasp of key concepts, understanding their relationship to other information, and how the information applies in other circumstances instead of just memorizing to avoid failure.

In Turkey, students do not always attend university because of their curiosity to learn about a particular subject or to be excel in a particular profession and contribute to the economy by doing the job they have ambition for. Rather, they obtain a qualification for a job which may even not be their first choice as an area to study. For this reason, they are extrinsically motivated and they must have mostly used surface approaches for learning. It is suggested for politicians, educational reformers, and other related people that learners should be guided to be more inner-motivated and to achieve their ambitions, not just to obtain an ordinary job that would provide a secure future for them.

In order to facilitate deep learning, promote engagement, and increase achievement, some more suggestions for teaching in the blended environment were provided. To increase the behavioral, cognitive, emotional, and agentic engagement of TC, instructors may pay more attention to the learners and encourage them by asking questions or interacting personally to arouse their passion for becoming active both in the face-to-face part of the course and online discussions. Moreover, as stated by Kuh (2009) the more students study a subject, the more they know about it, practice, and get feedback from other learners and instructors on their tasks such as their online reflections or collaborative tasks, the deeper they understand and learn the subject. For this reason, to increase behavioral, emotional, cognitive, and agentic engagement, instructors may provide frequent feedback regarding the posting of learners, in-class tasks and assignments. Moreover, to initiate the cognitive engagement of TC, the instructor may ask higher-order questions to direct them to search and think critically. Furthermore, as suggested by Reeve and Tseng (2011) learners should be encouraged to take purposive roles in their learning and make an intentional, proactive, and constructive contribution such as asking 'Can we conduct this?, 'Is it appropriate to implement this strategy when the classes are crowded?', etc. during the instruction which may contribute to agentic engagement positively. In other words, expressing their preferences, asking questions, and letting the teacher know what they like, need, and want may contribute to the agentic engagement.

In the current study, all engagement types were investigated through a self-reflective scale, however, as suggested by Yang (2011), behavioral engagement can be measured by counting the number of posts, system queries, overall usage of the communication platform whereas the emotional engagement can be assessed through in-class observations, analysis of posts including salutations and other affective implications, and last but not least, the cognitive engagement may be assessed through the analysis of participants' posts qualitatively according to the level of critical thinking, making inference, judgement, explanation, elaboration, etc. Finally, the findings of the current study might be investigated through further research by involving interviews and observations which ask questions like how TC choose and use learning approaches or engage in courses. Also, investigating TC from other universities with larger sample sizes, to enhance the generalizability of findings beyond the instructional and assessment policies and practices of one institution may be suggested.

REFERENCES

Baepler, P., Walker, J. D., & Driessen, M. (2014). It's not about seat time: Blending, flipping, and efficiency in active learning classrooms. *Computers & Education*, *78*, 227-236. https://orcid.org/10.1016/j.compedu.2014.06.006

Bedenlier, S., Bond, M., Buntins, K., Zawacki-Richter, O., & Kerres, M. (2020). Facilitating student engagement through educational technology in higher education: A systematic review in the field of arts and humanities. *Australasian Journal of Educational Technology*, *36*(4), 126-150. https://doi.org/10.14742/ajet.5477

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education, 17(1).* https://orcid.org/10.1186/s41239-019-0176-8

Ben-Eliyahu, A., Moore, D., Dorph, R., & Schunn, C. D. (2018). Investigating the multidimensionality of engagement: Affective, behavioral, and cognitive engagement across science activities and contexts. *Contemporary Educational Psychology, 53, 87-105.* doi:10.1016/j.cedpsych.2018.01.002

Biggs, J. (1991). Approaches to learning in secondary and tertiary students in Hong Kong: Some comparative studies. *Educational Research Journal*, *6*, 27–39.

Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*, *71*, 133–149.

Biggs, J. B., & Tang, C. (2007). *Teaching for quality learning at university*. (3th ed.). Berkshire: Open University Press.

Bowden, J. L-H., Tickle, L., & Naumann, K. (2019). The four pillars of tertiary student engagement and success: A holistic measurement approach. *Studies in Higher Education, 1–18.* https://orcid.org/10.1080/03075079.2019.1672647

Buckley, C. A., Pitt, E., Norton, B., & Owens, T. (2010). Students' approaches to study, conceptions of learning and judgements about the value of networked technologies. *Active Learning in Higher Education*, *11*(1), *55–65.* https://orcid.org/10.1177/1469787409355875

Cheng, G., & Chau, J. (2014). Exploring the relationships between learning styles, online participation, learning achievement and course satisfaction: An empirical study of a blended learning course. *British Journal of Educational Technology*, *47*(2), 257-278. https://orcid.org/10.1111/bjet.12243

Churchill, D., King, M., Webster, B., & Fox, B. (2013). I*ntegrating learning design*, *interactivity*, *and technology*. In H. Carter, M. Gosper & J.Hedberg (Eds.), Proceedings of 30th Australian Society for Computers in Learning in Tertiary Education Conference (ASCILITE) (pp. 139–143). Sydney, Australia.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th Ed.). New York: Routledge.

Collaço, C. M. (2017). Increasing student engagement in higher education. *Journal of Higher Education Theory and Practice*, *17*(4), 40-47.

Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African-American youth: Context, self, action, and outcomes in school. *Child Development*, 65, 493-506.

Fredricks, J. A., Blumenfeld, P. C., & Paris A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, *74*(1), 59-109. https://orcid.org/10.3102/00346543074001059

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research.* Boston: Pearson.

Cope, C., & Staehr, L. (2005). Improving students' learning approaches through intervention in an information systems learning environment. *Studies in Higher Education*, *30*(2), *181–197.* https://orcid.org/10.1080/03075070500043275

Colak, E. (2015). The effect of cooperative learning on the learning approaches of students with different learning styles. *Eurasian Journal of Educational Research*, 59, 17-34 doi: 10.14689/ejer.2015.59.2

Dolmans, D. H. J. M., Loyens, S. M. M., Marcq, H., & Gijbels, D. (2016). Deep and surface learning in problem-based learning: A review of the literature. *Advances in Health Sciences Education*, *21*(5), 1087–1112. https://orcid.org/10.1007/s10459-015-9645-6

Ekinci, N. (2009). Learning approaches of university students. *Education and Science*, *34*(151), 74-88. Retrieved from http://egitimvebilim.ted.org.tr/index.php/EB/issue/view/31

Entwistle, N. J., & Entwistle, A. (1991). Contrasting forms of understanding for degree examinations: The student experience and its implications. *Higher Education*, *22*(3), *205–227*. https://orcid.org/10.1007/bf00132288

Field, A. P. (2009). *Discovering statistics using spss*. (3th ed.). London: SAGE Publications.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, *82*, 221-234. doi: https://doi.org/10.1037/0021-9010.82.2.221

Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). The effect of engagement and perceived course value on deep and surface learning strategies. *Informing Science: The International Journal of an Emerging Transdiscipline*, *12*, 181-190. https://doi.org/10.28945/435

Gordon, C. & Debus, R. (2002). Developing deep learning approaches and personal teaching efficacy within a pre-service teacher education context. *British Journal of Educational Psychology*, *22*, 483-511. https://orcid.org/10.1348/00070990260377488

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). London: Pearson New International Edition.

Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A measure of college student course engagement. *The Journal of Educational Research*, *98*(3), 184-192. doi: 10.3200/JOER.98.3.184-192

Hara, N., Bonk, C. J., & Angeli, C. (2000). Content analysis of online discussion in an applied educational psychology course. *Instructional Science*, *28*(2), 115–152. https://doi.org/10.1023/A:1003764722829

Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education*, *90*, 36-53. doi:10.1016/j.compedu.2015.09.005

Ilhan-Beyaztas, D. & Senemoglu, N. (2015). Learning approaches of successful students and factors affecting their learning approaches. *Education and Science*, *40*(179), 193-216. https://orcid.org/10.15390/EB.2015.4214

Jamaludin, R., & Osman, S. Z. M. O. (2014). The use of a flipped classroom to enhance engagement and promote active learning. *Journal of Education and Practice*, *5*(2), 124–131. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/10648

Ke, F., & Xie, K. (2009). Toward deep learning for adult students in online courses. *Internet and Higher Education*, *12*, 136–145. https://orcid.org/10.1016/j.iheduc.2009.08.001

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education 38*(5), 758-773. https://orcid.org/10.1080/03075079.2011.598505

Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, *141*, 5–20. https://orcid.org/10.1002/ir.283

Leung, D. Y. P., & Kember, D. (2003). The relationship between approaches to learning and reflection upon practice. *Educational Psychology*, *23*(1), 61-71. https://orcid.org/10.1080/01443410303221

Lim, D. H., & Morris, M. L. (2009). Learner and instructional factors influencing learning outcomes within a blended learning environment. *Educational Technology & Society*, *12*(4), 282–293.

Loyens, S. M. M., Gijbels, D., Coertjens, L., & Cote, D. J. (2013). Students' approaches to learning in problem-based learning: Taking into account professional behavior in the tutorial groups, self-study time, and different assessment aspects. *Studies in Educational Evaluation*, *39*(1), 23–32. https://orcid.org/10.1016/j.stueduc.2012.10.004

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal*, *37*, 153-184. https://orcid.org/10.3102/00028312037001153

Minbashian, A., Huon, G. F., & Bird, K. D. (2004). Approaches to studying and academic performance in short-essay exams. *Higher Education*, *47*(2), 161-176. https://orcid.org/10.1023/b:high.0000016443.43594.d1

Moore, N. & Gilmartin, M. (2010). Teaching for better learning: A blended learning pilot project with first-year geography undergraduates. *Journal of Geography in Higher Education*, *34*(3), 327–344. https://orcid.org/10.1080/03098265.2010.501552

Nieuwoudt, J. E. (2020). Investigating synchronous and asynchronous class attendance as predictors of academic success in online education. *Australasian Journal of Educational Technology*, *36*(3), 15-25. https://orcid.org/https://doi.org/10.14742/ajet.5137

Onder, I., & Besoluk, S. (2010). Adaptation of revised two factor study process questionnaire (R-SPQ-2F) to Turkish. *Education and Science*, *35*(157), 55–67. Retrieved from http://egitimvebilim.ted.org.tr/index.php/EB/issue/view/38

Pintrich, P. R., & De Groot, E. (1990). Motivated and self-regulated learning components of academic performance. *Journal of Educational Psychology*, *82*, 33-40. https://doi.org/10.1037/0022-0663.82.1.33

Redmond, P., Devine, J., & Basson, M. (2014). Exploring discipline differentiation in online discussion participation. *Australasian Journal of Educational Technology*, *30*(2), 122-135. https://doi.org/10.14742/ajet.624

Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology*, *105*(3), 579–595. https://orcid.org/10.1037/a0032690

Reeve, J., & Tseng, M. (2011). Agency as a fourth aspect of student engagement during learning activities. *Contemporary Educational Psychology*, *36*, 257-267. https://doi.org/10.1016/j.cedpsych.2011.05.002

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*, 571-581. https://doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., & Pitzer, J. R. (2012). *Developmental dynamics of student engagement, coping, and everyday resilience.* In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), Handbook of research on student engagement (pp. 21-44). Boston, MA: Springer US. http://dx.doi.org/10.1007/978-1-4614-2018-7_2.

So, H.-J., & Bonk, C. J. (2010). Examining the roles of blended learning approaches in computer-supported collaborative learning (CSCL) environments: A delphi study. *Educational Technology & Society*, *13*(3), 189–200.

Steen-Utheim, A. T., & Foldnes, N. (2018). A qualitative investigation of student engagement in a flipped classroom. *Teaching in Higher Education*, *23*(3), 307-324. doi: 10.1080/13562517.2017.1379481

Tay, H. Y. (2016). Investigating engagement in a blended learning course. *Cogent Education*, 3, 1-13. http://dx.doi.org/10.1080/2331186X.2015.1135772

Xerri, M. J., Radford, K., & Shacklock, K. (2017). Student engagement in academic activities: A social support perspective. *Higher Education*, *75*(4), 589–605. https://orcid.org/10.1007/s10734-017-0162-9

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (6th Ed.). Boston: Pearson Education Inc.

Ucar, F. M., & Sungur, S. (2018). Adaptation of engagement questionnaire to Turkish for science classes: Validity and reliability study. *Elementary Education Online*, *17*(3), 1691-1705.

Ward, S. (2019). *Impact of blended learning on student motivation, engagement and achievement* (Masters' Thesis). Wittenberg University. Retrieved from https://etd.ohiolink.edu/!etd.send_file?accession=witt1561715675863705&disposition=inline

Wilson, K., & Fowler, J. (2005). Assessing the impact of learning environments on students' approaches to learning: comparing conventional and action learning designs. *Assessment & Evaluation in Higher Education*, *30*(1), 87–101. https://orcid.org/10.1080/0260293042003251770

Yang, Y.-F. (2011). Engaging students in an online situated language learning environment. *Computer Assisted Language Learning*, *24*, 181-198. doi: http://dx.doi.org/10.1080/09588221.2010.538700.

Zheng, X. & Guo, J. (2019). *Towards the differences on deep learning of students in blended learning environment*. Proceedings of International Joint Conference on Information, Media and Engineering (IJCIME). https://orcid.org/10.1109/IJCIME49369.2019.00028

Zhou, Y. & Zhang, Z. (2018). A study of blended learning design to promote deep learning. Proceedings of International Conference on Management and Education, Humanities and Social Sciences (MEHSS 2018). https://doi.org/10.2991/mehss-18.2018.91

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, *21*, 3-17 https://orcid.org/10.1207/s15326985ep2501_2

APPENDIX

Sample Case

You have heard the news about reactions towards the students with autism in the media. (https://www.hurriyetdailynews.com/school-principal-suspended-after-parents-protest-autistic-children- minister-148479)

1. If you were the teachers of these students, how would you determine their needs who need special education and by using which one of the need assessment techniques? (Explain your ideas by stating the reasons).

2. Which curriculum design would you prefer if you were a curriculum designer? (Explain your ideas by stating the reasons).