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PROMOTING ENGAGEMENT IN SELF-PACED ONLINE LANGUAGE COURSES - A
CASE STUDY IN THE CONTEXT OF A MOOC FOR LEARNING ARABIC

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Student academic engagement is a very essential aspect of learning and is known to have a direct positive influence on the quality of learning outcomes as well as performance and retention. Thus, promoting opportunities for better engagement in online learning can potentially lead to increased learning. The concept of engagement in the literature overlaps with other concepts such as motivation, self-efficacy, and self-regulation which has some commonalities and differences. Engagement is an immensely complicated phenomenon incorporating students' emotions, cognition, and behaviors, and is largely influenced by contextual factors. Irrespective of the problematic issues in the clarity of concept, it has a potential as a multidimensional or meta-construct to provide a deeper understanding of how students learn in comparison to relying on a single construct.

The aim of this research is to gain a deeper understanding of the factors affecting engagement in a self-paced online language learning context. The research questions are centered on three key variables which are the subject of investigation in this study: student engagement, the self-paced approach of learning, and online language learning.

Using a sample of 33-60 participants on a course made up of 19 lessons while following an exploratory approach, semi-structured interviews were carried out as the main source of data in this study and analyzed using qualitative content analysis. Also complemented with a questionnaire survey and learning analytics results in order to ensure data triangulation using multiple sources. Student engagement was investigated both at the lecture and the course level during the progress and completion phases of the students’ learning path, and further analyzed utilizing quantitative statistical tests in the survey, and learning analytics data.

The results of this investigation showed that engagement of students in some parts of the course was very high due to the topics being covered, and thus course content was ranked as a top factor promoting engagement. Two more factors, namely the course structure followed by the methods of teaching also engendered positive emotions and raised motivation in students while facilitating cognitive engagement. In addition, video and graphics quality followed by the students’ background and mode of delivery of instruction came in fourth and fifth places respectively in terms of factors affecting engagement in this context. The results of this study have been discussed from a theoretical as well as a practical standpoint in terms of the implications for Instructional Designers, Course Developers and Online Instructors who aim at promoting and enhancing student engagement. The study is valuable because it provides a deeper insight into student engagement in a self-paced online language learning context and the reasons behind individual student’s engagement (or disengagement) as they relate to specific contextual factors. The findings of this study can help in the design of more engaging language learning courses.
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1 INTRODUCTION

The information and communication technologies (ICT) and its achievements have got a major influence on various aspects of our contemporary life, one of these aspects is definitely education (Ivana & Tea, 2016). For instance, the fast-growing use of online education afforded by all kinds of emerging technologies made online courses very popular, easily accessible, and feasible choice for a large number of adult learners, thus changing the way we look at education radically (Lee, 2016). Similarly, Howard & Scott (2017) indicated that the availability of internet connectivity and new technologies worldwide has radically changed classroom education by allowing for easy access to all modes of learning for all kinds of people who might have been unable to reach such educational resources in the past because of either timing, cost and/or location. The authors continue to illustrate that most of the recent technologies, eg. tablets and smartphones, have provided a lot of opportunities for learners all over the world to become engaged with various types of learning activities and access all kinds of educational materials at anytime, anywhere, and using whichever mode that suits them, whether synchronously or asynchronously and in ways that have not existed before.

In addition to that, Perifanou & Economides (2014) stated that a large number of private and public educational organizations worldwide are currently investing in instructional design, online platforms and course development offered by emerging technologies for the purpose of succeeding at delivering instructions online while aiming at reaching a large number of students all over the world. Moreover, Technology-mediated learning is essentially becoming the norm for students nowadays as the number of students learning through online courses and blended learning continues to increase (Henrie, Halverson, & Graham, 2015).

More specifically as an example, Massive open online courses (MOOCs) have completely transformed the basic notion of education and have supported learners worldwide to gain access to educational courses that are open, participatory, and distributed in addition to encouraging lifelong learning and networking among learners (Perifanou & Economides, 2014). Furthermore, MOOCs are also rapidly increasing in number, for example in the first half of 2014, the increase ratio of number of MOOCs
offered by universities and organizations all over the world has gone up to 91% (Hew, 2014).

Additionally, MOOCs as an open educational resource (OER) movement and a platform for learning have caused a great amount of public attention because of its disruptive potential and unexpected rise (Christensen et al., 2013). As mentioned by Laura Pappano in The New York Times (2012), the year of 2012 was the “year of the MOOC”. On the other hand, even though MOOCs attract a very large number of enrolments by a wide variety of students, however, research shows that a very small number of students who sign up for a MOOC manage to complete the course till the end. Therefore, the success and growth of MOOCs are mostly hindered by student dropouts (Ramesh, Goldwasser, Huang, Daumé III, & Getoor, 2013). For instance, one of the MOOC critics indicated that the overall completion rates in MOOCs range from two to ten percent while she argued that the enrolment numbers of students taking MOOCs are declining over time as it is also influenced by the course length and duration (Jordan, 2014). Therefore, MOOCs are facing a very major challenge in this respect, thus it is very essential to understand how to support student engagement in online learning in general and in MOOCs in particular while aiming at potentially increasing completion rates and improving the learning experience. This challenge highlights the importance and potentiality of this study.

In this study, MOOCs phenomena has been used as a platform for language learning. Since research shows that web-based learning technologies have a powerful impact on the learning environments used by higher education institutions in any case whether campus-based, blended format or entirely online learning environments (Czerkawski & Lyman, 2016), thus I will be exploring how to support students engagement within the context of a self-paced online language learning course for teaching Arabic delivered on a platform called Udemy, where learners interact with the course content in a self-paced approach, asynchronous communication with the instructor and with no collaboration with peers.

With regards to language education and according to EPALE (2017), recently there has been an increased demand for language education in European societies where adult learning has been acknowledged as an essential part of the European Commission’s lifelong learning policy. Moreover, developing language competencies and abilities is
becoming unprecedentedly a major qualification required for a successful career and life in our modern society which creates a bigger need for developing MOOCs for language learning to support learners worldwide (Perifanou & Economides 2014).

Speaking of language courses in particular, according to several studies in the past few years (2011-2018), a large number of language programs have utilized e-learning and web-based technologies in order to provide various language courses in a blended learning mode or fully online for the purpose of allowing more flexibility while improving productivity and managing costs associated with it (Blake, 2011; Lee, 2016; Rubio & Thomas, 2018). In addition to that, when combined with pedagogically appropriate approach, technology can have a positive and measurable impact on foreign language (FL) learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014; Rienties, Lewis, McFarlane, Nguyen & Toetenel, 2018).

In this study, the focus is on student engagement as a multidimensional construct since it is one of the most important fields of study within the field of education and educational psychology because it has a direct positive influence on the quality of learning outcomes and achievement (Gunuc & Kuzu, 2015). It is also a key element when designing an online course or an online learning environment (Cook, Bingham, Reid, & Wang, 2015).

Generally, there has been a large body of research on student engagement as a dependent variable, over the past fifty years, which highlights the role and importance of student engagement within the educational psychology field (Eccles & Wang, 2012). More specifically, over the past two decades, the interest in the research on student engagement has increased rapidly regardless of its definition or way of measurement, where the studies conducted have gone beyond student engagement identified through observable measures such as student’s participation and time spent on the task (Natriello, 1984; Brophy, 2004). Moreover, only recently researchers have started looking into the emotional and/or the affective aspects of engagement in their conceptualization and definitions by touching on factors such as the feelings of belonging, attachment and enjoyment (Finn, 1989; Connell, 1990).

This study takes into consideration the three dimensions of engagement as highlighted by Fredricks, Blumenfeld, and Paris (2004) who proposed that engagement is a multidimensional construct which contains cognitive, emotional and behavioral aspects
while focusing on the emotional aspect of engagement. So what is the main purpose of this study? This will be covered in the next section.
2 AIMS AND RESEARCH QUESTIONS

The main aim of this study is to gain a deeper understanding of the factors that affect student engagement by exploring it as a multidimensional construct (Fredricks et al., 2004) within a self-paced online language learning environment. An attempt is made to investigate how a self-paced approach to learning with the absence of any active or synchronous involvement on the part of the course instructor will affect student engagement in the context of learning Arabic on a specific platform, Udemy. This platform relies mostly on asynchronous communication and video content for the delivery of instruction.

Since the design, development and implementation of MOOCs for language learning have not been sufficiently investigated (Perifanou & Economides, 2014), one of the aims of this study is to fill this research gap. As Henrie, Halverson & Graham (2015) emphasize, determining the best ways to utilize technology for the purpose of meaningfully engaging learners in effective experiences of learning is an important challenge for researchers today. Furthermore, in order to explore best practice in this area, the nature of self-paced online learning of Arabic as a context is investigated in this study.

In order to achieve the aim of this study, an exploratory investigation is conducted to ascertain the factors affecting the quality of students’ cognitive, emotional and behavioral engagement within the previously-mentioned contextual conditions with a particular focus on the emotional aspect of engagement. For this specific purpose, the following three research questions are proposed:

1) What factors affect engagement in a self-paced online language learning context?
2) How can engagement in a self-paced online course for learning Arabic be supported?
3) How can the design and development of self-paced online language courses be improved?

In a self-paced online learning context, the course instructor is not actively involved in the process, does not lead virtual classrooms and there are no deadlines or other similar pressures on students to promote engagement. Therefore, the first research question is aimed at identifying the factors affecting student engagement while the second one is focused on finding the best ways to support student engagement within this
particular context, having investigated the key factors affecting it from a student perspective. This investigation makes it possible to identify the top context-related factors that foster student engagement to learn in a self-paced language learning environment.

The final aim of this study is to answer the third research question related to course design. The design of online language learning courses can be improved by utilizing the knowledge gained concerning context-specific engagement factors, and thus create more student engagement within this type of context.
3 THEORETICAL FRAMEWORK

The aim of this chapter is to discuss the theoretical framework underpinning the present study. Therefore, the theories of Fredricks et al., (2004) on engagement as a multidimensional construct have been adopted here to provide a general framework and a deeper understanding of student engagement within the context of this study and also to make sure that the real human experience and its richness is thoroughly understood (Henrie et al., 2015). Other theories of engagement for several other scholars have been also presented here to explain various aspects connected to the engagement concepts being investigated in this study and to set clear boundaries for this research in order to establish a foundation for finding answers to the research questions proposed in this study.

3.1 Student Engagement Overview

3.1.1 Defining Engagement

In this section, I will first provide a general overview of the concept of engagement, then discuss the challenges faced in finding a standard and agreed on definition and finally I will present the various types of definitions and the one that has been selected as a framework for this study. First of all, there has been a large body of research done on academic motivation and student engagement in the past fifty years as a subfield within the educational psychology which focuses on developing taxonomies for various beliefs, needs, attitudes, and emotions that encompass academic motivation and engagement theories (Eccles & Wang, 2012). For instance, over the past two decades, the interest in the research on student engagement has grown rapidly, regardless of how it has been conceptualized, defined and measured. Additionally, in the early studies conducted, researchers have primarily defined the concept of student engagement through certain behaviors that can be easily observed such as students’ participation and time spent on task (Natriello, 1984; Brophy, 2004).

Later on, some researchers have also touched on the emotional and/or the affective aspects of engagement in the conceptualization and definitions by including factors such as the feelings of belonging, attachment and enjoyment (Finn, 1989; Connell, 1990). The other aspects of engagement such as the cognitive dimension has been looked at
afterwards, according to more recent studies by Fredricks et al., (2004), represented by the investment students put in the learning process, and the use of more deep learning strategies in order to persevere while facing the learning challenges. Also, Eccles & Wang (2012) highlight the significant stress on engagement as the behavioral manifestation of motivation and of social and personal identities.

Second, before discussing the various types of definitions of student engagement in the literature as a construct, it is worth looking at the major challenges recognized by several scholars in studying and defining the construct of engagement. For example, Azevedo (2015) criticizes the concept of engagement and describes it as one of the most extensively misused and also overgeneralized constructs in the educational research, as well as the instructional and the psychological sciences. He argues that engagement has been connected to various constructs to describe almost everything ranging from the academic performance and achievement of students; ways of interacting with materials; classroom behaviors and activities; implementing cognitive, metacognitive, affective, motivational, and social processes within academic contexts and so on and so forth. Similarly, other studies reported similar confusion in defining engagement as a construct, for example, Eccles & Wang (2012) suggest that the concept of student engagement was used very loosely to refer to everything positive about the relationship of students to their school. Moreover, several studies tackled the academic, behavioral, affective, emotional, social, psychological, cognitive, metacognitive and agentic dimensions of engagement (Fredricks et al. 2004; Finn, & Zimmer 2012; Christenson, Reschly, & Wylie, 2012). Interestingly, according to Henrie et al. (2015), the findings of two studies on student engagement in connection with positive learning outcomes may result in conflicting conclusions due to the differences in the way researchers have defined, conceptualized and operationalized the construct. To sum up, the greatest challenge in studying and measuring student engagement in technology-mediated learning is the lack of coherence in defining, modeling, and operationalizing student engagement (Henrie et al., 2015). This highlights the challenge encountered in order to find a specific definition to fit within the scope of this study.

In general terms, there are various definitions for engagement in learning sciences, for example, in some studies engagement is defined in very broad terms such as student’s participation or involvement in any educational activities related to education and learning (Jennings & Angelo, 2006). The authors continue to highlight the size and type, as well as
the intensity of investment made by students within the educational and learning experiences while continue to explain the concept as it is all about the dedicated time and efforts made by students toward the learning activities which reflects deeper engagement. Their conclusive argument is that more time and efforts means more and better learning and more likelihood in persisting and succeeding. It is important to note that, this definition is very broad and limiting as it does not touch on the emotional aspect of students engagement but rather focuses on resources such as time and efforts as metrics of measuring engagement. Other researchers like Krause (2005), define engagement as the energy, time and resources behind any activities aimed at leveraging learning at the university level. Another definition that has some similarities to the previously mentioned, is the one given by Trowler (2010) that "Student engagement is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution." (Trowler, 2010, p. 3).

Similarly, engagement is also being viewed by other researchers as the “energy in action, the connection between person and activity” (Russell, Ainley, & Frydenberg, 2005, p. 1). The quality of efforts and time in the definition of engagement has been tackled by other scholars, for example, Kuh & Hu (2001) define engagement as the quality of efforts exerted by students to participate in educational activities in order to contribute to the desired outcomes. These definitions still seem insufficient as highlighted by Järvelä, Veermans, & Leinonen (2008), the different areas of research concerned with defining engagement as a psychological investment in learning and strategic learning from a cognitive perspective, are not sufficient to deal with the qualitative sides of engagement. This highlights the need for a more comprehensive and concrete definition for the concept of engagement.

Therefore and for the purpose of this study, a definition by Fredricks et al. (2004) for student engagement has been selected as the grounding theory. Fredericks et al.’s definition of engagement has been cited in most of the studies conducted on student engagement, thus it seems to be very popular and widely accepted among researchers as confirmed by the large number of citations. Moreover, student engagement as defined by Fredricks et al. (2004) is a multidimensional construct which contains three different components: behavioral engagement, emotional engagement and cognitive engagement.
Most importantly, the authors continue to explain that considering engagement as a multidimensional construct, gives an opportunity to inspect these three elements, i.e. behavior, cognition and emotion simultaneously as well as dynamically, in order to examine the interactive effects. Hence, it seems more comprehensive than the other definitions that does not touch on these elements, and that is another reason behind adopting this definition for this study apart from its popularity and wide acceptance. The authors also highlight, it is important to understand that these three factors are also “dynamically interrelated within the individual; they are not isolated processes” (Fredricks et al., 2004, p. 61).

The present study will be using and focusing on student’s cognitive, behavioral and emotional engagement as defined by Fredricks et al. (2004) and as summarized below:

- Behavioural engagement – this refers to the student’s participation in academic, social and other educational activities, also efforts, attention and the positive conduct;
- Cognitive engagement – this indicates the mental efforts, psychological investment in learning, motivation to learn, self-regulation, the willingness to dedicate efforts to the learning process, going beyond the requirements, the use of learning strategies, a preference for challenges; and
- Emotional engagement – this refers to the affective aspects, students’ emotional reactions, interest, attitudes, perceptions and feelings towards the educational and learning environment, as well as the relationships with instructors, peers and school.

Finally, there are instruments which have been already developed by some researchers for the purpose of measuring student engagement based on the previously presented constructs. This will be discussed in more details later within the methodology part of this study.

3.1.2 Engagement Theories & Challenges

Even though engagement theories and conceptualizations have significantly developed over time and various aspects have been looked into as discussed in the previous section, yet little consensus still remains in the research literature when it comes to the definition of
engagement. This reflects essential variations in the way in which engagement is being operationalized and measured. For example, Fredricks et al. (2004) proposed that engagement can be viewed as a meta-construct, or as an organizing framework, which in turn connected several research areas (e.g., motivation, school environment, sense of belonging, behavioral participation, self-efficacy, and so on) and this gave an opportunity to study the relationship among these constructs and the way they interact together (Appleton, Christenson, & Furlong, 2008; Christenson, et al., 2012). On the other hand, other researchers did not accept this type of conceptualization, while arguing for a clear way of defining the construct of student engagement with well-defined boundaries (Finn, & Kasza, 2009; Appleton et al., 2008).

Furthermore, there is a lack of consensus not only on the definition but also on the number of subtypes for student engagement (Christenson, et al., 2012), which is considered to be the major challenge faced in the study of engagement. The literature shows two, three and sometimes four subtypes for student engagement as a multidimensional construct. Regardless of this, still there is an agreement on the engagement concept as comprised of at least behavioral participation and affective component, while other scholars recognize the cognitive aspect to be part of it as well (Christenson et al., 2012; Appleton, Christenson, Kim & Reschly, 2006; Fredricks et al., 2004). Apart from the two and three models, another model for engagement taxonomy has been suggested, which contains four subtypes: behavioral, cognitive, academic and psychological by some other researchers (Reschly & Christenson, 2006a, 2006b).

According to Christenson et al., (2012), another visibly major challenge faced in the study of engagement, is the vague relationship between motivation and engagement due to the fact that some researchers use both of the concepts interchangeably.

In conclusion, even though researchers seem to agree on the multidimensionality of student engagement as a construct, yet they do not entirely agree on the types and number of these dimensions, which is considered to range from two to four dimensions. In this case, researchers need to set up clear definition and conceptualization for student engagement as a concept in each study they conduct (Christenson et al., 2012). Therefore, the definition by Fredricks et al (2004) for student engagement as a multidimensional construct has been adopted for this study and to guide the research questions since it also provides clarity apart from the popularity and wide acceptance.
3.1.3 Disengagement and Dropout

In the previous chapter, the various theories, conceptualizations and definitions of engagement, as well as the challenges faced in studying engagement have been discussed. Thus, it is also worth tracing the origins of the concept of students engagement and its relationship and effect on schools and institutions. To begin with, and in order to understand and control students boredom, their sense of alienation, and dropping out, both concepts ‘student engagement’ as well as ‘disengagement’ were formulated in the 1980s (Finn, & Zimmer, 2012). For instance, Fredricks et al. (2004) indicated that researchers, policymakers, and teachers have immensely paid a lot of attention to and concentrated on student engagement as a key to solve several school problems students encounter during their academic journey. Examples of some of these problems, are high dropout rates, low levels of achievement, boredom and alienation.

In Finn & Zimmer’s research on student engagement (2012), the authors differentiate between engaged versus disengaged students by first explaining that there are certain types of behaviors that show engagement such as the daily tasks required for learning, for instance, attending classes, following the instructions given by teachers, completing all kinds of assignments both the in-class and the out-of-class ones, besides having the right attitude about school in general, and about certain subject areas in particular. Then they continue to define the disengaged students as those who are not actively participating in the activities of the school and the classes, are not able to feel the sense of belonging to their school, are not involved cognitively in learning process, and/or showing inappropriate or negative behavior (Finn, & Zimmer, 2012).

In the same research, the authors suggest that dropping out is more of a process rather than a single event, and while they review some of the most prominent models of dropping out, they found out that one of the most common factors present in several of these models is student engagement (Rumberger & Rotermund 2012; Finn, & Zimmer, 2012). To sum up, engagement is a factor that affects students satisfaction in the learning process and dropout decisions, thus studying engagement could help uncover various problems in learning environments, which in turn could help in designing new environments or improving the existing ones and decrease the dropout rates. This has been a general overview of engagement definitions, theories and challenges in school contexts,
however, in the next section I will be looking at engagement particularly within online contexts.

3.2 Engagement in Online Learning Context

3.2.1 Online Engagement: Opportunities, Challenges & Factors

Generally, student engagement is considered to be one of the most important fields of study within the educational field and the educational psychology, that means educational systems that are lacking student engagement would face a big challenge in achieving positive outcomes since it has a direct positive influence on the quality of learning outcomes and achievement which is very essential for learning, performance, retention…etc (Gunuc & Kuzu, 2015). Moreover, it is also considered an important aspect of teaching and learning as it is directly connected to students’ learning, and achievement-related outcomes (Fredricks et al., 2004; Appleton et al., 2008). Also, various studies recognize engagement as an essential factor and a precondition when it comes to the success of student learning (Kuh, 2003; Ramesh et al, 2013; Lazareva, 2017, September).

For example, previous research in cognitive theories of learning and instruction found that students are able to learn more deeply if they were engaged in active learning compared to being merely passive recipients of information, therefore deeper learning requires engagement in active learning, also besides being actively engaged paying attention can help students learn more (Pearce, Ainley, & Howard, 2004; Mayer, 2003; Bulger, Mayer, Almeroth, & Blau, 2008; Fredricks et al., 2004; McMahon & Portelli, 2004).

As for online learning in particular, engagement is a very important factor that strongly affects learning in online contexts as well, for example, Guo, Kim & Rubin (2014) research explains that, student engagement in online learning is considered a necessary prerequisite for learning. Therefore, student engagement is also a key element when designing an online course or an online learning environment (Cook et al, 2015). In the same fashion, Meyer (2014) argues that engaging student in online learning environments could be more important compared to engagement in the on-campus courses due to the fact that online learners have less possibilities for engagement with their institution and also perhaps because they face more demands when it comes to their time and attention.
When it comes to the challenges which online engagement faces, the 2014 Horizon Report explains that engagement in online courses presents several challenges compared to engagement in face to face courses as it has a long way to go before it reaches to the same level with face to face teaching (Johnson et al., 2014). This requires more investigation to find out better ways to engage students in an online learning environment. The major challenge seems to be the existing research gaps in the field. This was explained in a study by Redmond, Abawi, Brown, Henderson, & Heffernan (2018), as the authors indicate that even though the number of students at higher education institutions who are studying online continues to increase yet the research still reflects some gaps which requires developing certain models in order to guide the academic practices to be able to support the engagement and its complexities faced in online learning environments.

In addition to the research gaps, Czerkawski & Lyman's study (2016) summarized student engagement within online learning environments as "a relatively new problem for instructional designers" and that more empirical research is needed as well in order to advance the knowledge and findings on it (Czerkawski & Lyman, 2016, p. 538). The authors continue to explain that there is a bigger need for more research to investigate engagement within online learning contexts, as the current research on student engagement is resulting in more complex questions and issues. Similarly, other studies have also suggested that retention for online courses remains very low compared to courses with face-to-face instruction, which is another challenge faced in online learning contexts (Dietz-Uhler, Fisher, & Han, 2007).

Another challenge facing online engagement is the issue of measurement, generally speaking studying engagement in online learning is known to be more difficult compared to studying engagement in classroom settings as stated by Ramesh et al. (2013), the lack of ability to directly observe the attendance, participation in discussions and grades of online learners, brings challenges in assessing the student engagement. As a result, student engagement cannot be captured easily, however, through the analysis of behavioral patterns it can be inferred or interpreted to assess the student’s level of involvement and its type (Ramesh et al., 2013). Similarly, Hew (2014) mentioned that a lot of MOOC instructors used the completion or dropout rates of online learners as a way to measure student engagement. He continues to argue that completion rates can be used to measure only behavioral and cognitive engagement. On the other hand, Guo et al.’s study (2014) used engagement time and problem attempts as metrics to measure engagement, other
studies like Bulger’s et al. (2018) used time on the task as a measurement for engagement, still all these measurement tools are concerned merely with the behavioral dimension of engagement thus lacking taking into consideration the multidimensionality of engagement as a construct.

Additionally, in a study by Milligan et al. (2013), the authors highlight the influence of learner’s differences in terms of skills, dispositions and motivations on engagement while trying to investigate the patterns and factors of engagement in a massive open online course. Their study revealed that learners different backgrounds, interests, motivations, language proficiencies, and learning needs can make engagement even more challenging.

Looking at the factors that affect engagement in online learning situations, recent studies on online courses have suggested that there are various factors that could impact student engagement, for example, the instructor presence (Das, 2012), the use of humour by instructors (Imlawi, Gregg, & Karimi, 2015), the availability of feedback & additional course resources (Sull, 2012), the high level of challenge faced during the learning tasks (Cakir, 2013; Ma, Han, Yang, & Cheng, 2015; Howard, Ma, & Yang, 2016), and student-related factors (Milligan, Littlejohn & Margaryan, 2013). Other scholars emphasize that teacher’s support has a big influence on student's engagement, the behavioral, emotional, and cognitive aspects within academic and interpersonal contexts (Fredricks et al, 2004). Moreover, the ability to use the technology in terms of user’s skills and knowledge, alongside the previous experience affect engagement with learning through technology (Lazareva, 2017).

In addition, in a case study conducted by Hew (2014) where he examined three highly rated MOOCs in the disciplines of programming languages, literature, and arts & design; he found the following five factors, as considered by students, to be important in terms of promoting an engaging online learning experience: “(1) problem-centric learning with clear expositions, (2) instructor accessibility and passion, (3) peer interaction, (4) active learning, and (5) course resources to address participant learning needs” (Hew, 2014, p. 9). After further analysis of all the previously mentioned five factors, the author found that the three most critical factors are; the first, problem-centric learning with clear expositions; second, instructor accessibility and passion; and the fourth active learning. Most importantly, the findings of his study suggest that certain factors, such as instructor
presence and active learning, that could have an influence on student engagement within the context of traditional online courses, could similarly influence the student engagement in massive open online courses as well.

Finally, it is worth mentioning that in a study by Dixson (2010) which was aiming at creating effective student engagement within online courses, while the author was trying to find out the type of activities and/or the interaction channels which could result in a more highly engaged students, the results of his study indicate that there was no specific activity which will automatically make students more engaged in online classes. The findings of his study also suggest that higher engagement might also be related to several communication channels and that communication and interaction among students and their instructor is strongly connected to higher student engagement with the course, thus the need for online instructors to use meaningful and various ways of interacting with students and with each other.

The current study is primarily taking into consideration the multidimensionality of engagement as a construct and the context of online language learning in a self-paced mode, thus investigating student emotional, cognitive, and behavioral engagement within an online Arabic course. Therefore, later in the methodology part I will be explaining the challenges and measurements used to assess students' engagement in this study in more details.

3.2.2 Online Engagement: Categories and Types

In a study by Hew (2014) where the author examined the literature on engagement in Massive Open Online Courses (MOOCs), he classifies the previous studies done on engagement in MOOCs into three main categories: the first one is that which tries to measure students’ engagement at the sign-up stage of MOOCs or during the registration phase such as the number of student enrolment and their motivation behind signing up for a specific MOOC. As an example, Hew and Cheung (2014) found that there are four reasons that motivate students to sign up for a certain MOOC: to improve student’s current knowledge or to study a new topic, curiosity about MOOCs, the aspiration for personal challenge and the willingness to collect a lot of completion certificates.
The second category is concerned with the activity phase of MOOCs where researchers mostly look at student behavioral engagement, its types or patterns throughout the progress of the MOOCs, for example by watching the video lectures, participating in the discussions forums, and submitting assignments for the online course while the third category includes the studies that examine engagement during the completion phase of MOOCs, for example, by looking at the student results and outcomes in terms of grades achieved at the end of the MOOC as well as the rates of completion and dropout (Hew, 2014).

In a study by Ramesh et al. (2013), the authors propose another model of classifying learner engagement as made of two different types; Active Engagement and Passive Engagement. The first category they assigned to those learners who show active involvement and explicit engagement via actively participating and publishing on the discussion forums, submitting assessments and solving quizzes. The Passive Engagement, on the other hand, refers to those learners who are implicitly engaged, for example through merely viewing content, watching lectures, and subscribing to posts on the discussion forums. These type of learners were considered not actively participating compared to the first group.

The present study is concerned with investigating engagement at the activity and completion phase, where I will be looking at students behavioral, emotional and cognitive engagement in order to explore the possibility of supporting and increasing engagement in this learning context and to improve the quality of the course design.

3.2.3 Online Engagement Framework

In this section, I will describe an interdisciplinary conceptual framework proposed and developed by Redmond et al (2018) for the purpose of understanding and examining online student engagement within the field of higher education. This framework utilizes categories developed based on themes from the research literature on student engagement. Redmond’s framework has been established based on social and constructionist approach mixed with a deductive thematic analysis in order to benefit from previous insights and discoveries in the field. Their framework was developed to evaluate and explore the practices of online learning connected to student engagement. Therefore, exploring this framework here will give a deeper insight into the literature review of this study and will
enhance the understanding of its findings.

In their literature review, Redmond et al. (2018) explain the elements of engagement which were defined separately yet are interconnected in the field of practice since engagement has been also identified as a multidimensional construct in the studies referred to. The authors continue to argue that the literature on face-to-face engagement has been restricted to the three main types of engagement: the behavioral, emotional and the cognitive one. Therefore, they highlight that their framework is considering engagement as a multidimensional construct with five interconnected elements that can be used by academic professionals in order to investigate engagement during learning from online courses, and also to examine the results of online teaching practices and online course designs. They emphasize, these elements are neither hierarchical nor linear in their nature, and that each element should not be studied or explored in isolation but rather to use the whole framework as a tool to be utilized for exploring the dynamics of online engagement.

To build Redmond’s online engagement framework, the authors used a constant comparison method for the purpose of analyzing the research literature in order to find out and recognize the existing and emerging themes. The way in which this framework is structured and organized is that it identifies specific indicators for each one of the identified five elements of the online engagement construct, while doing so, the authors suggest that their framework gives an opportunity to guide researchers as well as academics if they decided to study online engagement whether from a conceptual, practical or research perspective.

Redmond’s framework of online engagement is believed to give an opportunity to explore engagement as a multidimensional construct in online environments in a very detailed approach. It proposes these five components of engagement as very crucial for effectively engaging students in online learning and teaching environments: social engagement, cognitive engagement, emotional engagement, behavioral engagement, and collaborative engagement. Below is a description of each of these five elements as explained by the authors:

**Social Engagement**

In Redmond et al.’s framework (2018), social engagement refers to the efforts made by students in order to participate in both activities the academic and non-academic ones beyond the virtual classroom for the purpose of creating relationships with their peers. These types of social interactions among peers within online environments can be seen
when students are speaking about themselves and their contexts in a manner that could lead to continuing via social media. The social engagement has an equally important role to the intellectual one as its importance is clearly reflected when peers are in situations where they have to work and cooperate together during learning tasks. Furthermore, actions taken by students for the purpose of creating a community like social forums and through open communication platforms are some of the indicators of social engagement in online learning environments. Besides, building trust and respect to establish a sense of belonging as well as the development of interactions into relationships, whether beyond the scope of study or via study-related relationships, among peers and instructors is also among the other indicators for social engagement.

Cognitive Engagement

Redmond et al (2018) proposed that cognitive engagement is the most significant type of engagement as it is considered to be the active processing of learning. According to their literature review on engagement theories, the authors criticize the lack of clarity in the way engagement was defined in the literature as it overlaps with other similar concepts like motivation, self-regulation, values, beliefs, metacognition, strategy use…etc. To summarize the indicators of cognitive engagement, the authors refer to the two different levels of cognition, the deep compared to the surface cognition while explaining that within the online learning environments, the surface cognitive engagement is reflected when students contribute their ideas without judgement or clarification and when they show simple general agreement with other peers. On the other hand, students who embark on more complex cognitive processes show deep cognitive engagement by justifying or comparing solutions and ideas to integrate and bring new information and judgements while thinking critically. The authors continue to illustrate the features of deep cognitive engagement as a psychological investment in the learning process; a preference for challenges, persistence, going beyond basic requirements, aligning previous knowledge while arguing that instructors have the ability to influence the level of cognitive engagement through the learning activities and the assessment tasks. Among the other indicators of cognitive engagement in Redmond’s framework are the development of deeper understanding within a specific discipline or context and discipline expertise. Moreover, the authors highlight that strategies used by students to achieve cognitive engagement, for example critical thinking, justification, integration, and metacognition are also multidisciplinary in nature and could be applied to any learning situation.
Behavioral Engagement

The positive behavioral engagement, as described in Redmond et al.’s framework (2018), consists of three dimensions; first dimension is reflected in certain positive behaviors like asking questions, obeying the rules, paying attention and participating in discussions; second, being actively involved in activities that are mostly academic; and third, the act of participating in activities that are non-academic in nature. The authors illustrate, getting involved in learning tasks, participating in classroom activities, positive attitude, self-regulation and showing big efforts and persistence are among the characteristics of behavioral engagement. They continue to explain, among the indicators of behavioral engagement is when students support and encourage other peers to become more active in the learning process and complete the required tasks, also developing academic and multidisciplinary skills as well as identifying the existing opportunities and challenges for achieving successful learning.

Collaborative Engagement

Redmond et al.’s framework (2018), suggest that collaborative engagement is about the collaboration among and learning with peers, instructors, school and the industry that results in the development of different types of relationships and networks for the purpose of supporting learning. The authors argue that social and emotional engagement demonstrate that participating in both educational and non-educational activities while associating with others brings positive social, academic, and emotional results. According to the authors, online collaboration is more likely to happen in the case of those who are studying online compared to those who are studying face-to-face as most probably they are not geographically located near each other. Finally, developing professional networks is another indicator for collaborative engagement that can help students start their career in a specific profession and can be useful for them to support each other in their professional learning and development (Redmond et al., 2018).

Emotional Engagement

Emotional engagement, according to Redmond et al. (2018) is about students’ emotional reaction, attitudes and feelings towards the learning process, peers and teachers or even towards the educational institution itself. Based on the literature review, the authors stated four indicators for the emotional engagement which are “managing expectations,
articulating assumptions, recognizing motivations, and committing to learning” (Redmond et al., 2018, p. 195). They continue to explain that the emotional engagement can be seen and observed via student’s enthusiasm, attitude, interest, enjoyment or even anxiety during their learning noting that only students who value learning and appreciate success can show positive emotional engagement.

Due to the context of this study, in terms of looking at a self-paced language learning course, the primary focus is on exploring the three main variables, i.e. the emotional, behavioral and cognitive engagement. Therefore, collaborative and social engagement will not be investigated in this study due to the previously mentioned contextual conditions.

3.3 Language Learning in Online Context

3.3.1 Language Learning & Web-based Technologies

In this section, I will provide a quick overview of Language Learning theories such as Foreign Language (FL) learning and Second Language Acquisition (SLA) together with the effect of web-based technologies on language learning and on meeting learners’ needs and solving their issues. To begin with, there has been a large body of research on Language Learning which was primarily concerned with the learning activities and its effectiveness as well as the impact they have on learners’ behaviour and outcomes, for example, one of the basic beliefs in Foreign Language (FL) learning and Computer Assisted Language Learning (CALL) is that, effective communication with native speakers of the language being studied is what learners want to achieve the most as a learning outcome (Rienties et al., 2018).

In the same way, Tudini (2018) found that gaining conversational fluency in the target language has been a major motivation for university students enrolling to various language courses which affects the pedagogical approach of Foreign Language programmes, especially those ones delivered online or in blended learning model. He then proposed that being in contact regularly with those who are speaking the target language, whether within an online or face-to-face context, can enhance the quality of experience in FL learning. He also concluded that interactivity needs a high level of connectivity among learners, speakers of the target language and language teachers in order to provide
systematic opportunities for a comprehensible input and negotiation of meaning and language use.

Another issue related to language learning is that previous research on the negotiation of meaning and comprehensible input in Second Language Acquisition (SLA) studies suggests that receiving feedback and resolving certain issues of comprehensibility in real time enhances language learner’s ability to make progress in language communication which highlights the importance of interaction (Varonis and Gass, 1985; Swain, 1985). Moreover, all these theoretical considerations bring various questions on the affordances of web-based technologies in meeting learners’ needs, expectations and solving their problems. Let’s now look at these affordances in more details.

Czerkawski & Lyman (2016) suggest that web-based learning technologies have a powerful impact on the learning environments used by higher education institutions in any case whether campus-based, blended format or entirely online learning environments. In the same way, Howard & Scott (2017) suggest that technology became an integral part of language education and Foreign Language learning process where ICT has become ubiquitous because of connecting educational technologies to different types of knowledge, and different places of learning at the same time. Besides, in a study by Golonka et al (2014), the authors suggest that technological innovations can support online language learners by boosting their level of interest and motivation through increasing interaction opportunities, input for target language (TL), and feedback besides supporting instructors by giving them better opportunities to interact with various types of students and giving them efficient ways to organize their course contents.

Similarly, Morgan’s research (2012) emphasize, the importance of the development of Web 2.0 tools, as it has the potential of boosting the currently available opportunities for language learners to achieve meaningful use of the target language through actively developing their listening, speaking, reading and writing skills within real-time contexts while enabling them to produce and publish online their own work. Furthermore, Morgan recognizes that Web 2.0 tools empower the students by giving them the control over the choices they make in terms of what to keep or discard and over the content they consume or produce. He continues to argue, it also allows for students output and provides interaction opportunities for them to engage with more competent speakers of the target language. The author concludes that effective language teaching currently requires
effective use of Web 2.0 Technologies and encouraging students to use these tools in their language learning experience beyond the classroom.

Likewise, Distance Language Learning (DLL) is a very powerful learning approach which gives learners the ability to become remotely engaged in language learning experience that is authentic and accessible from any location while empowering learners with plenty of listening and speaking practice opportunities as well as immersing them with cultural knowledge of the target language (Rienties et al., 2018). To sum up, according to Lee (2016), when discussing Online language learning (OLL), and while utilizing web-based technologies, instruction can be delivered in various formats; Web-facilitated, blended, or through completely virtual classrooms.

3.3.2 Research Problems & Challenges in Online Language Learning

The research on Computer-assisted language learning (CALL) reveals various common problems such as low quality of research design and its description, lack of good choices of variables to be studied, not so relevant data on participants as well as studies involving incompetent users of technology (Golonka et al, 2014). The authors continue to argue, this creates a challenge for researchers of Foreign Language (FL) and Second Language Acquisition (SLA) to assess the efficacy of technology use in the field of learning and teaching Foreign Languages. Similarly, other researchers highlighted other problems in CALL research, for example, being somehow exclusively focused on English and Western European languages, apart from the insufficient systematic approach in studying the main factors affecting the effectiveness of FL learning (Felix, 2005; Hubbard, 2005).

In the same way, in Wang & Camila’s study (2012) on the current literature of Web 2.0 technologies and its use in Second Language (L2) learning, the authors have found that most of the studies have been conducted on English, Spanish, German, and French compared to very little research that has been conducted on the application of Web 2.0 technologies in teaching languages like Arabic, Chinese, or Russian besides that most of the studies on Web 2.0 technology and language learning are not well grounded on strong theoretical base with certain methodological limitations. As a result of this understanding, the present study aims to fill another research gap by studying, exploring and analyzing student engagement within a context of learning one of these less researched languages in the Web 2.0 technologies studies, which is Arabic.
Apart from the research problems, learning in online context brings various several challenges for example, Lee (2016) stated that even though online courses have got several advantages in comparison to traditional classroom learning, such as convenience and self-pacing, yet some disadvantages like the insufficient face-to-face interaction and teacher guidance as well as the need for students to employ self-regulated strategies can decrease students’ motivation and active engagement in learning and can also cause failure to enjoy all the benefits offered by learning via online courses. He then proposes the need to develop more compelling learning conditions in order to encourage and support interaction, collaboration, motivation and autonomy. Therefore, the current research also tries to figure out better ways to develop and foster stronger engagement within the online language learning context in addition to filling the identified research gaps.

To further investigate these challenges, a study by Schulze & Scholz (2018) explained, when discussing online language learning at university, students’ attitude towards learning online often times is negative. Furthermore, the authors continue to highlight, skeptical comments are given by a large number of students and instructors alike, for example, one of the major feedback given is the lack of ability to learn a foreign language online, another is that engaging students in a communicative language learning environment online seems impossible which affects negatively oral communicators. The completion rates seem to be another major challenge for online learning, for example, in a study conducted by Friðriksdóttir (2018) to investigate the impact of different types of modalities on the retention and engagement patterns of learners in a MOOC for learning Icelandic Online, the author identified that completion rates are very low in online learning in general and are significantly influenced by the mode of delivery in particular; as he found that, for example, the blended learning mode is the most effective delivery mode in retaining and engaging students. The results of his study showed the highest completion rates for the blended mode followed by the distance mode and finally the self-directed mode revealed to have the lowest completion rates across the three modes of course delivery.

Similarly, another major challenge that language learners are facing when learning online using a specific platform like Udemy, is the lack of real time interaction between instructors and peers, thus any opportunities for communicative language fluency is hindered. As Tudini (2018) suggested that communication technologies which allow for real time interaction has got the most considerable potential for the development and
achievement of communicative language fluency as it provides individualized scaffolding and direct instruction through connecting language learners and peers together for the purpose of interaction and learning.

Finally, other challenges for engagement in online learning is the context. According to a study by Yang (2011), even though previous research has highlighted the connection between student engagement and learning performance, still the context of interaction between students and the teacher has not been taken into consideration.

3.4 Self-Paced Learning in Online Context

3.4.1 Self-paced Learning & Learner Autonomy

In general, as suggested by Dick & Carey (2004), self-paced instruction is mostly driven by and based on the learner’s response, regardless if the content is a curriculum, technical tutorials, or a corporate training as long as it does not require an immediate response from the instructor. It is structured in a way that allows the learner to move across topics or segments at their own speed and their own pace. Equally important, it is worth noting that self-paced instruction is becoming immensely popular due to the shift from classroom to internet in education worldwide (Dick & Carey, 2004). Furthermore, self-paced learning according to Singh (2003), indicates on-demand and solitary type of learning that proceeds at a certain pace managed and/or controlled by learner themselves. It is also considered as more of an individual way of learning or self-studying mode that is asynchronous in nature lacking real-time interaction with the instructor as compared to the instructor-led learning which is a synchronous type of learning that requires the active participation of the instructor leading virtual classrooms online (Clark & Mayer, 2016).

The major advantage of self-paced instruction, as stated by Stowers & Tessmer (1986), is that it can provide a great deal of flexibility to both the students and the academic institutions, however, it requires a careful planning beforehand. On the other hand, one of the major challenges in self-paced learning, which is also considered a big disadvantage in online learning, is that learners are required to employ self-regulated learning strategies which can decrease students’ motivation and active engagement in learning and can also result in failure to enjoy all the benefits of online learning which is
primarily due to the insufficient face-to-face interaction with the teacher and the lack of guidance (Lee, 2016).

On the other hand, it is interesting to note that one of the major impacts of self-paced learning in online contexts is the development of learner’s autonomy. For example, according to a study by O’Rourke & Schwienhorst (2003), the introduction of social constructivist principles to FL education has contributed to the concept of learner autonomy that is being encouraged by computer-assisted language learning (CALL). Therefore, there is a need to discuss learner’s autonomy from a motivational perspective in this framework since it is directly very connected to self-paced learning. To further explain, based on the tenets of Self-determination theory (SDT), irrespective of the person’s gender, age or cultural background everyone has three primary psychological needs that motivate them to do or not to do something; these three needs are autonomy, relatedness and competence (Deci & Ryan, 1985).

According to Deci & Ryan (1985), autonomy is about the need for having freedom or having the choice over our own actions. Autonomy supports students motivation and enhances the behavioral engagement aspect because it gives the individual the possibility to choose whether to participate or not to in a certain activity, and in addition to that, it also gives a motivational basis for the emotional aspect of engagement based on the assumption that the psychological freedom over one’s actions are likely to bring positive feelings to the students towards the learning situation itself (Skinner, Furrer, Marchand & Kindermann, 2008).

In contrast to that motivational support based on the autonomy, and as proposed by Hew (2014), the idea of autonomy does not mean that there is no need for guidance from an authority. The author continues to argue, for some people having autonomy over the learning process may prove to be challenging and problematic as the learner might get stuck and become unable to proceed with learning a certain subject on their own and in such a case learner autonomy could be best achieved when the teacher’s role is more of a counsellor. Moreover, as Mackness, Mak & Williams (2010) suggest, even though autonomy as a principle in MOOC provides the learners with an opportunity to gain maximum choices of where, when, how, and with whom as well as what to learn in some cases, still it presents some paradoxes which proved to be difficult to solve within online
courses due to the lack of support and structure in connection with learning in an online course.

3.4.2 Learning Analytics in Online Language Learning

In a study by Rubio, Thomas & Li (2018), where the role of teaching presence and student participation was investigated within a blended Spanish course, the findings of the research utilized the learning analytics to demonstrate a strong correlation between the low grades of students who participated in the course and their low levels of online participation. The results also showed that continuous participation is the strongest variable for predicting the success of students in the course. Moreover, in another study by Rienties et al. (2018) the authors suggest that within the field of learning analytics, researchers are able to utilize the principles of Big Data for the purpose of understanding, measuring, and analyzing the complexities of learning outcomes and processes. So how is Learning Analytics defined?

According to Sclater, Peasgood, & Mullan (2016), learning analytics is defined as ‘the measurement, collection, analysis and reporting of data about the progress of learners and the contexts in which learning takes place’ (p. 15). Learning analytics can support understanding and enhancing the learning process and environment (Ferguson, 2012; Long, Siemens, Conole, & Gasevic, 2011; Rubio et al., 2018). Based on this definition, the main purpose of Learning analytics is to provide rich data within the LMS where the course is delivered in terms of grades students obtain and learners behaviors, besides it can also facilitate the design of new models for university administrators to enhance learning, teaching, decision making strategies, and organizational efficiency (Siemens & Long, 2011; Schulze & Scholz, 2018). Mainly, learning analytics is concerned with the type of data that is actionable and can be utilized in the form of formative feedback for students, instructors, and administrators as it can also make it easy to predict how the students will perform in future, evaluate their academic performance more effectively, and give support and guidance in improving course design (Rubio et al, 2018).

In particular, within the area of language learning, learning analytics can support both language teachers and their institutions in many ways to enhance student progress and provide them with more personalized and rich learning experience. Also within CALL, its importance in understanding the complexities of FL learning has been recently recognized (Siemens & Long, 2011; Rubio et al, 2018; Thomas, Reinders, & Gelan, 2017). On the
other hand, Rienties et al. (2018), based on the meta-analysis of two recent studies on learning analytics research and policy, have emphasized that mere data collection on clicking behaviour and user engagement in online learning without understanding learners’ way of learning, the learning context, and the design of suitable learning environments might have very little added-value. The authors continued to argue that one of the major challenges faced in this respect, is for learning analytics to provide an actionable feedback which can happen once the learning context from which data is obtained is taken into consideration.

Additionally, the major problem in using learning analytics to measure the progress of learners and learning outcomes is that, even though it is easy to measure frequencies of learners activities online through the analytics dashboard, yet it is still difficult to identify where learning is by simply attaching the word learning next to analytics data and figures. As mentioned by LAK conference keynotes and in a study by Sedrakyan, Malmberg, Verbert, Järvelä, & Kirschner (2018), where the authors attempted to bridge the gap between learning analytics and learning science by designing a feedback dashboard as an analytics tool to support learning regulation, the authors suggest that the main challenge in exploring learner behavior using learning analytics data, is that it provides a process-oriented feedback that is based solely on learner performance indicators, however, the typology of these dashboard feedback provides little knowledge relevant to different learning goals, outcomes and different learners.

As a result and in light of what has been discussed in this chapter, the present study is designed in a contextualized manner while aiming at utilizing the learning analytics in Udemy within a language course to understand learners’ cognitive, emotional and behavioral engagement taking into consideration the specific context of self-paced approach to learning while exploring the challenges faced and opportunities offered by a self-paced language learning environment concerning learning one of the least researched languages like Arabic in order to gain a solid background for the study.
4 METHODS

This study integrates different methods to measure the engagement level of course participants by going beyond the quantitative analysis of student engagement since quantitative measures are useful but can not adequately reflect, as an example, the reasons behind student engagement in certain parts of or the whole course (Hew, 2014). Consequently, the mixed methodology has been selected for this study. The reason behind this choice is that the qualitative method when supported by a quantitative method as a mixed research strategy has proven to have several benefits and advantages over one method approach as suggested by Creswell (2014): first it provides a more comprehensive analysis of the research phenomena or problem; second, to utilize the advantages of both data the quantitative and the qualitative; and third, it has been recognized by several scholars that all methods have certain limitations, thus several researchers believe the best way to neutralize or cancel the effect of the biases associated to any single method is to use another method with it (Creswell, 2014).

More specifically, the Concurrent Embedded Strategy of mixed methods has been chosen as the best fit for this research. According to Creswell (2014), this strategy utilizes one data collection phase, where both qualitative and quantitative data are simultaneously collected, the author continues to explain this approach as distinguished by having a primary method guiding the whole research together with a secondary database that supports the research findings in the procedures. This way the secondary method will be embedded within the primary method where the secondary method can provide an answer to a different question compared to the primary one and as a result, the data could either be presented and interpreted side by side as a multi-level design in order to give a comprehensive deep understanding of the problem or to be compared together to gain different perspectives from different levels within the study.

First of all, as to the qualitative side, the case study approach has been adopted as the primary method for conducting this research due to a variety of reasons summarized in the literature on research methodology; according to researchers like Yin (2003) and Baxter & Jack (2008), a research should be designed as a case study when: (a) the main focus of the study is to be able to answer certain questions like “how” and “why”; (b) it is not possible to manipulate the behaviour of participants involved; (c) there is a need to
cover specific contextual conditions the researcher believes to be relevant to the phenomenon being investigated in the study; or (d) the boundaries between the phenomenon and context are not that clear. Furthermore, the case study has been selected as a primary method in this research by designing an exploratory holistic single case study using a variety of data sources such as learning analytics, questionnaire and interviews. This is in order to explore a situation where there is little clarity on the outcomes from the intervention to be conducted in this study (Yin, 2003), additionally, to answer “how” questions while covering specific contextual conditions and finally because the phenomenon requires a deeper understanding and a detailed view due to lack of previous research done on it (Yin, 2003; Creswell, 2014).

Second, to further explore, examine and analyze the relationship between students cognitive, emotional and behavioral engagement in an online language learning course designed to teach Arabic in a self-paced approach for beginners while aiming to uncover the engagement challenges faced within the mentioned context, the quantitative methods will be utilized to examine the relationship between some of these variables using a questionnaire survey.

4.1 Research Context

In this section, I will be utilizing my experience as a Course Developer, Instructor and Observer in this online Arabic course on Udemy in order to first describe the context of the study, second the course participants, third Udemy as a technology and learning tool, and finally the educational features of the course such as the content and resources used. Then I will be reporting the findings based on the analyzed data which was collected from the course participants. This study was conducted on an online introductory course teaching Egyptian Arabic published in October 2015 on a learning platform called Udemy. In the context of learning online, Udemy offers the opportunity for learners to study in a self-paced approach by interacting with the course content and watching the video-recorded lectures at their own pace, time and place without the need for an active involvement or participation from the instructor. The course is structured in a way that provides a great deal of flexibility to course users by allowing the learner to move from one topic to another at their own speed and their own pace. Moreover, the course is delivered in asynchronous
self-studying mode with no real-time interaction with the instructor and no peer collaboration.

The course was first released for free for a period of approximately one month as a promotional activity, then it was upgraded to a paid course after the trial period. The free signup period has witnessed a massive enrollment by a large number of students on a daily basis, thus the decision of the instructor was to turn it into a paid course. Once it became a paid one, the enrollment rates dropped down sharply from approximately 15-25 students per day enrolling for free to 2-5 students per month purchasing the course. Students who completed the course would receive an e-Certificate free of charge automatically generated by Udemy and sent to the student’s e-mail address immediately upon completion of the course. It is important to note that, there is no passing or failing in this course, and no graded assignments, quizzes or tests given to students enrolled to this course.

No previous background or knowledge in Arabic is required from course users before signing up to the course, therefore it is designed for absolute beginners. Furthermore, the course page highlights the need for students to dedicate roughly 3-5 hours on a weekly basis to watch the video content and practice the dialogues presented in the course. Participants are also encouraged to find a practice partner on their own, since the course instructor does not support in facilitating such collaboration or arranging peers for practice. On the other hand, the role of the instructor was to answer the questions posted by participants on the course page if any came up, thus the instructor is limited to an administrator or moderator’s role.

4.1.1 Participants

Since it was published in 2015, this course attracted a diverse range of participants from all over the world, roughly 742 students are taking the course from 115 different countries as documented in August 2018. Udemy does not provide information about the background of the course participants, thus demographics of the learners were not shown in the learning analytics, since there is no accessible data on student identity recorded by Udemy. The platform also has restricted access to students’ contact details, yet there is an option to message the student merely via the platform due to Udemy’s policy.
It is beyond the scope of this study to look into the learners’ motivation and reasons for signing up to the course, however the drop down in enrolment ratio when shifting the course from free to paid one, gives an insight into the two different groups who are signing up for self-learning courses on Udemy; the paid versus the free ones. In addition, according to the course landing page, the target audience of the course as indicated by the course developer and instructor is: (a) beginners and students of Arabic language; (b) anyone who is interested to learn a very popular dialect in Arabic that is widely understood all over the Arabic speaking countries; (c) anyone who is interested to learn how to speak basic Arabic with the right pronunciation within three to five hours of study and practice.

The outlined recommended prerequisites for the course and the expected hours of weekly workload as mentioned on the course landing page are: (1) no previous background or knowledge in Arabic is required, this course is for absolute beginners; (2) students are expected to dedicate three to five hours weekly to watch the video content and practice the dialogues; (3) an open and positive attitude for learning a foreign and exotic language like Arabic.

4.1.2 Tools

There are various tools and popular applications for language learning online such as Livemocha, Duolingo, WorDive, Udemy, Coursera…etc. Udemy, as a learning tool selected for this study, has got 24 million students worldwide taking various courses online as confirmed in July 2018. It is a platform for developing and selling online courses, within areas like IT, software, entrepreneurship, design, languages, marketing, arts, photography, health & fitness as well as few other categories. As Gaebel (2013) suggests, it encourages learners to take courses that allow them to develop personal as well as professional skills in a cost efficient and flexible way compared to traditional study courses. One of the characteristics of Udemy is that it provides an opportunity to everyone to teach online and offer a MOOC. The website mentions that the offered courses are provided by the world’s top experts, including New York Times best-selling authors, CEOs, celebrities, and Ivy League professors (Gaebel 2013).

The issue of quality of instruction is being questioned in Udemy. Gaebel (2013), argues that it seems not clear with Udemy, if these experts are chosen or not, and whether any quality assurance exists apart from the users’ demand. Furthermore, Gaebel (2013)
also states, given the fact that Udemy allows anyone who is passionate about a certain subject to start teaching on their platform, that causes several design challenges to the individual instructors attempting to develop courses on this platform. Moreover, one of these biggest challenges is the issue of student engagement.

Udemy as a learning platform provides analytics dashboard to instructors which generates data on student dropout and completion rates that can be used as a metric for measuring students behavioral/cognitive engagement Hew (2014). It is important to note that, Udemy learning analytics section gives three types of data on the course participants. This will be discussed later in more details in the data collection and analysis part of the study.

4.1.3 Task

In this chapter, I will describe the educational features of the course in terms of content, resources, and the pedagogical design underpinning the course foundation.

Description of the Course

The course title is “Egyptian Arabic - Introductory Course I”, it is a one-hour video content course made up of 19 lectures, designed for beginners' level and offered by a native Egyptian Arabic instructor. The aim of the course is to help students from all walks of life, everywhere in the world, to learn Arabic with the dialect spoken mostly in Egypt. (The Egyptian variety of Arabic is also known as Egyptian Arabic).

The learning outcomes of the course are summarized on the course landing page as below;

- Learn the Arabic letters and sounds in both Standard and colloquial forms including a variety of example words.
- Learn & practice together the greetings, introducing yourself, getting to know the other person besides the most common polite phrases to use.
- Learn the most popular polite and survival expressions used in daily situations explaining when & how to use them with the knowledge on the levels of formalities.
- Learn the basic grammar lessons used in daily situations such as yes/no questions, negations, pronouns...etc.
As a bonus lecture, students will learn about the history of Egyptian Arabic, its components, and the similarities and differences from the standard Arabic.

In this one-hour introductory course, students are expected to learn and practice the fundamentals of Arabic to get started in running basic-level conversations and dialogues. This absolute-beginners course also presents some training on conversation and pronunciation to help students practice saying the words with a clear and easy-to-understand accent like native Egyptian speakers.

After signing up to the course, participants get a lifetime access to the course then start watching the video lectures which range between 5-12 minutes in length each lecture. The platform redirects them automatically to the next lecture in order and as designed by the course developer. Participants are also able to navigate from one lecture to another in a randomized way without any restricted order, thus the course users have the flexibility to start with any lecture they desire to begin with. Other than that, the platform will be taking them automatically to the next lecture in order. It is important to note, this self-paced course is driven by and based on the learner’s response and does not require an immediate response from the instructor (Dick & Carey, 2004) where students determine on their own when, where, and at what time to start and/or finish learning from the course and for how long the session would be if they decided to divide the course into several learning sessions. Therefore, there is no specific or predetermined schedule set by the instructor of the course and no time-frames or deadlines for starting or finishing the course. This means, it is completely the students’ decision to set up their own schedule at their own pace within their own convenient time-frames for learning. Moreover, as per the Lifetime Access policy of Udemy, the course never expires and student could come back at any point of time in the future to resume learning from the course.

Upon completing the course, participants would receive their e-Certificate from Udemy sent to their email directly without the need to go through exams, assignments or tests. The role played by the instructor was: first designing and recording the video lectures; second publishing the lectures on the platform; and third answering students’ questions posted in the learning page/forum; finally, the instructor can, if he/she would like to, monitor the course learning analytics to check on participants’ progress. Additionally, outside of the educational activities, course developers and instructors have the possibility to do marketing by themselves for their own courses. Below is a link to the course on Udemy:
4.2 Data Collection

In this section, I will describe the different types of instruments used for collecting data together with an overview of the grounding theory behind the choice of data collection instruments. This is provided at the beginning of this section in order to establish the theoretical background for the data collection part of the study.

In a study by Henrie et al. (2015), while the authors reviewed the literature on the way student engagement has been measured in the context of technology-mediated learning, they stated that student engagement is comprised of both components the self-perception and the behavior. Therefore, both self-reported and observable indicators can be appropriate measures. In addition to that, there is a wide range of instruments that have been developed that seek to measure or capture student engagement, for example, Fredricks et al.’s report (2011) summarized 21 instruments that were used to measure engagement of upper elementary students via high school. While trying to identify the available instruments, this report provided a thorough literature review discussing the results in terms of the purpose and use of each instrument, what is measured, and the available technical information connected to their psychometric properties (Fredricks et al., 2011).

Regardless of the diversity of instruments developed, the main challenge is that a big need for better methods of study and measures of engagement still remains. Since the majority of the existing engagement measures are quite general, and not focused on specific situation, task, or subject (Fredricks & McColskey, 2012; Eccles & Wang, 2012). As Eccles & Wang (2012) continue to highlight, this issue brings the need to integrate domain-specific measures in order to determine if the engagement is content specific or if it only reflects a general tendency. Therefore, the present study is designed to look into domain-specific engagement factors. Furthermore, it is difficult to know if the student engagement is being improved unless it is accurately and appropriately measured, additionally, it is difficult to design useful programs to improve student engagement unless the aspects of student engagement are better understood as in what way they affect the other aspects connected to learning and performance (Eccles & Wang, 2012). In the same study, the authors stated that when researching complex questions such as in what way
learning is influenced by different types of student engagement, careful consideration of measurement issues is required, for example, (1) how constructs being measured are defined, (2) how to accomplish internal and external validity, also (3) how findings are interpreted. They continue to argue, the issues of measurement and interpretation could definitely include various perspectives, methods, and various levels.

Aiming at data triangulation (Shenton, 2004) and enhancing data credibility (Yin, 2003), data for this case study research has been collected from multiple sources; Udemy learning analytics, a self-report questionnaire survey and semi-structured interviews have been used as the three instruments for collecting data in this study. The aim is to measure student engagement as a multidimensional or meta-construct that includes three dynamically interrelated aspects; behavioral engagement, cognitive engagement and emotional engagement (Fredricks et al., 2004). The first aspect was measured by examining the data on learners’ active participation on the learning platform as an indicator of behavioral engagement, the instructor’s analytics dashboard was used for gathering these data. The second aspect was assessed via checking participants motivation, paying enough attention and taking notes as indicators of cognitive engagement in the survey. The third aspect was measured using Likert scale questions in the survey and by conducting a qualitative analysis of the positive emotions expressed by participants towards the course content, way of teaching, learning using videos on Udemy, and the self-paced learning approach as indicators of emotional engagement.

Finally, this research focused on the emotional aspect of engagement as Pekrun (2011) stated that emotions can impact a wide range of cognitive processes that support learning, for instance attention, perception, memory, problem solving, and decision making. Moreover, emotions are also considered to be the fuel for the behavioral and cognitive engagement which results in high-quality learning outcomes (Henrie et al., 2015). Hence, the choice to focus on emotional engagement to be measured as a sub-construct in this study. The data were collected within the period of one month between July 24, to August 24, 2018.

4.2.1 Udemy Learning Analytics

As mentioned in various studies (Rienties et al., 2018; Ferguson, 2012; Long et al., 2011; Sclater et al., 2016), the purpose of learning analytics is to analyze, measure, and understand the learning outcomes and processes, the progress of learners, and the context
of learning in order to enhance learning, teaching, decision making strategies, and organizational efficiency (Siemens & Long, 2011; Schulze & Scholz, 2018). Therefore, the learning analytics as recorded in Udemy instructors’ dashboard has been utilized in this study as a source of data in order to gain an understanding of engagement within this learning context. For example, in a study by Henrie et al. (2015), the authors suggest that in technology-mediated learning environments, certain indicators can be used to potentially measure behavioral engagement such as assignments completion; logins to the website and its frequency; postings frequency; podcasts & screencasts numbers; time spent on a task, post or any online activity. Furthermore, the authors continue to explain that computer-recorded frequency measures can be used to gain a cost-effective and more scalable option for studying engagement without being obtrusive to learning by capturing data at the real-time level and in a hidden way while students learn which is very difficult for any human observer to gain. Additionally, there is a need for more research utilizing computer-generated data in order to have a better understanding of student engagement (Henrie et al., 2015).

Having compared the indicators mentioned by Henrie et al. (2015) to Udemy analytics section, it showed that Udemy provides certain data that can be used as indicators for measuring students engagement, for example, it provides three different types of data such as; first the course ratings on a scale from one to five stars by the users enrolled to the course as shown in Figure 1. in the appendix; second, it gives students reviews and opinions on the course from the participants who completed at least few lessons in the course as shown in Figure 2. in the appendix; third type of data is on Lecture Engagement as shown in Figure 3. in the appendix. These data show the percentages of active students who started, finished and/or dropped off a particular lecture as shown in a more detailed view in Figure 4. When I contacted the Udemy Instructors support in July 21, 2018 to understand the way they define and measure Active Students as compared to the Non-active Students, their response mentioned that Udemy does not have a standard definition for any of these concepts, however, they confirmed that the Active Students category refers to those who have started consuming the course content while the Non-active Students are those who have 0% completion rates.

Thus, lecture completion and dropout rates and percentages - as captured and measured by Udemy at the activity level in this course and documented on 24.07.2018, have been used as indicators for assessing behavioral and cognitive engagement as
explained by similar studies on engagement (Henrie et al., 2015; Hew, 2014). On the other hand, data on ratings and reviews does not reflect on students engagement as much as the quality of the course content as perceived by students, therefore such data were not used as indicators for assessing engagement in this study. Below is a reference Link to the analytics section of Udemy (it requires login):

https://www.udemy.com/course/451108/manage/analytics/engagement/

4.2.2 Quantitative Self-report Survey

Henrie et al. (2015) suggest that cognitive engagement requires self-reporting in some cases since certain indicators like values, beliefs, planning, and strategy use, may not be externally visible always. Moreover, the authors highlight that utilizing more than one indicator to measure engagement may provide the most fruitful information not only for researchers but for educators and instructional designers as well. Similarly, Appleton et al. (2006) stated that self-reporting is considered the most valid measure for the cognitive and emotional aspects of engagement as these aspects mostly focus on students’ perceptions of the learning experience. The authors continue to emphasize that self-report methods are also very critical to collect data related to the subjective perceptions of students compared to mere objective data collection of behavioral indicators like completing homework and attendance rates. Hence, in this study self-reporting has been used to measure cognitive engagement via assessing indicators like motivation, paying enough attention and taking notes and to measure emotional engagement using indicators like positive emotional reactions of participants towards the course content, the way of teaching, video learning on Udemy, and the self-paced way of learning.

Additionally, surveys are the most common method for measuring student engagement in technology-mediated learning, and they are useful to use when studying and evaluating the unobservable aspects of student engagement such as the emotional and cognitive dimensions, for example, when trying to understand the emotions of students, their use and application of cognitive strategies and/or mental energy (Fredricks & McColskey, 2012; Appleton et al., 2006). Furthermore, surveys are also a scalable option for distant learners, especially in comparison to other methods like human observation while it also provides ways to improve instructional design and develop better systems (Henrie et al., 2015).
On the other hand, Henrie et al. (2015) argue that surveys have got some drawbacks such as not providing timely data on the student engagement, data are collected at the end of the learning activity, not during the activity, and that surveys may divert students from learning as a measurement and finally, uninterrupted learner engagement does not occur simultaneously. To neutralize or cancel the effects of the limitations of this method, other methods such as analytics and interviews have been used in collecting data on the three main aspects of student engagement to enhance reliability of the study (Shenton, 2004).

To sum up, there are different ways to operationalize engagement, which is a very necessary step to measure various indicators of engagement and ensure validity. For instance, Skinner et al. (2008) illustrate that an indicator is the feature which is part of or belongs to the construct of engagement, for example, excitement, persistence, interest, or attention as opposed to facilitators of engagement, which are the causal factors that are outside of the construct including variables like motivation or self-efficacy. Similarly, Yang (2011) reviewed the three main aspects of engagement and suggested ways to measure these dimensions broadly within computer-mediated settings, and more specifically connected various measurements to each category.

Convenience sampling method was chosen for the purpose of testing the survey in the first phase of data collection and after that the non-probability (purposive) sampling method was employed (Harrell & Bradley, 2009). Students were invited to complete the survey on a voluntary basis, this step was treated as some kind of a feedback or evaluation of the course by the students.

For collecting data using a survey in this study, I used a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree) questionnaire designed to assess students engagement with the course. The survey combined 10 different questions from previously validated instruments (Fredricks & McColskey, 2012; Fredricks et al., 2011; Henrie et al., 2015). Moreover, some questions were adapted from the Online Student Engagement Scale (OSE) which was validated by Dixson (2015). This step ensured quality and dependability of the study. In addition to the questions on engagement, the survey included items related to the students' individual characteristics, such as age, gender, and frequency of taking online courses. An informed consent was distributed to participants to gain their pre-consent on using the collected data for the research purposes.
The survey was then given to the first 2-5 participants for the purpose of testing and getting suggestions to improve the readability, clarity, and usability of the survey. Later on after testing the instrument, around 60 participants were given the survey to complete online using Survey Monkey via the below link, around 33 of them completed and returned it successfully:

https://www.surveymonkey.com/r/9KKQXHK

4.2.3 Semi-Structured Interviews

Since frequency measures of behavioral engagement, like learning analytics for example, do not provide a sufficient understanding of the quality of engagement by themselves, hence the need to integrate qualitative measures for the purpose of describing the nature of engagement being explored (Appleton et al., 2008). The interview is aimed at measuring cognitive and emotional engagement, with a focus on the emotional aspects. Furthermore, as Henrie et al. (2015) explained, qualitative measures like interviews are useful for the type of exploratory studies where there is an uncertainty regarding the way to measure or define student engagement. Therefore, the emotional engagement indicators being investigated in this study include positive emotions towards learning.

In this study, semi-structured interviews were designed to capture data using descriptive questions on topics of emotional and cognitive engagement based on Fredricks et al.’s study (2004) and Redmond et al.’s framework (2018). Furthermore, as explained by Harrell & Bradley (2009), in semi-structured interviews questions are standardized, conversational, in some order, with some probes to ensure that the researcher covers the right material. The authors continue to highlight that this type of interviews is often used by the researcher to deeply explore a particular topic and for the purpose of gaining a thorough understanding of the answers provided as well as to ensure consistent and complete information gathered from different interviews.

Below are the interview questions used to gather such data. These questions were aimed at exploring the major engagement opportunities and challenges faced; whether technology challenges, udemy as platform, self-paced learning from video content, learning Arabic, pedagogical issues, the lack of face to face interaction and peer collaboration or any other factors that hindered the students progress and completion of the course. Moreover, these questions helped to explore the most important engagement
factors from students perspective. The majority of these questions have been also used and validated by previous studies like McBrien, Cheng, & Jones’s study (2009), which explored the virtual classrooms’ role in distance education by analyzing the effects of synchronous learning environment on students’ learning engagement.

*Interview Questions*

(1) What was your prior experience with the subject?

(2) What did you like/dislike about the course? (probes: content, teaching methods, self-paced learning, Udemy technology, video lectures...etc)

(3) What was the major learning challenges you faced in this course? (probes: learning Arabic Online, self-paced learning...etc)

(4) Have you used any learning strategies in this course to overcome the self-paced learning issues, the lack of teacher support and peer collaboration? What were they? For example, did you set up a learning plan or a schedule for yourself?

(5) What are the most important factors from your perspective that would make this course more engaging? (probes: language learning, self-paced learning, teacher’s support, interacting with peers and collaboration or any other factors?)

(6) What future improvements you would like to see in this course?

4.3 *Data Analysis*

This research employs an exploratory approach in order to analyze three sets of data gathered from different sources: (a) LMS learning analytics, (b) a survey questionnaire and (c) interviews of approximately thirty to sixty participants who participated in this study. In order to address the research questions, the interviews explored the factors affecting engagement in the online self-paced language learning context and thereby identified the best ways to support engagement in this specific context of learning. The findings of the analysis are reported chronologically here, and later interpreted thematically in the discussion section to address each question in turn. Prior to analyzing the data from the LMS analytics and the survey, interviews were conducted with those participants who had completed 50-100% of the course and had also completed the survey. Subsequently, these interviews were analyzed using a qualitative content analysis technique which mainly aims
to offer a more rich and concentrated report of certain phenomena by utilizing descriptive categories (Elo & Kyngäs, 2008).

In the first analysis phase, the completion and dropout rates at the course level as well as the lecture level were analyzed quantitatively using a simple statistical analysis in SPSS and Microsoft Excel. This was carried out in order to assess behavioral engagement and to get an initial insight into the cognitive engagement of the course participants (Henrie et al., 2015). To further augment the analysis, more detailed data on engagement provided by Udemy was obtained; in this data, every lecture is separately analyzed (as shown in Figure 4). Lecture completion and drop-off is measured or calculated on two dimensions, and with two parameters: time (every 15 seconds is one point on the horizontal axis) and percentage of views by active students (represented by the vertical axis). Furthermore, again at the lecture level, there are three different subsets of data available on completion rates for every individual lecture (as shown in Figure 5): first, percentages of active students who started the lecture; second, percentages of active students who finished the lecture; and third, percentages of active students who completed (started and finished) the lecture.

Figure 4. Lecture Engagement with detailed view
Second, in the survey phase participants were invited to complete an online self-administered questionnaire to capture their responses relating to their engagement with the course. In total, 33 students completed and returned the survey after taking between 50-100% of the course on Udemy. Subsequently, data were analyzed quantitatively in SPSS/Microsoft Excel using simple statistical tests where numbers and percentages were calculated based on the survey results to identify some of the factors affecting students engagement and to examine the relationships between certain variables within this context. This phase was aimed at getting a deeper insight into these factors and to prepare for the third cycle of data collection and analysis using interviews.

Third, the interview data were qualitatively analyzed using content analysis technique in order to allow for the emergence of categories and themes inductively while working with the interview transcripts (Corbin & Strauss, 2007). As Hsieh and Shannon (2005) explain, qualitative content analysis is a method of research used for the purpose of subjectively interpreting text data and identifying themes or patterns by utilizing a classification process of coding that is systematic. Moreover, in the same study, the authors explain that one of the advantages of the content analysis as a method when used inductively, is that it allows the researcher to gain knowledge from the participants in the study without the need to force predefined or predetermined categories on participants. Additionally, according to Elo & Kyngäs (2008), the inductive content analysis is best suited when the phenomenon being studied is unknown with little previous research, or if the current knowledge available is not thorough, this way it allows the categories to emerge from the data collected in order to get a rich and full understanding of a certain phenomenon. That is the reason behind selecting the inductive qualitative content analysis.
as an approach for analyzing the interview data in this study. Furthermore, even though thematic analysis is one of the approaches that is similar in nature to content analysis and it can fit well in the scope of this study, as it is also used to identify patterns across qualitative data, yet I have chosen the content analysis over the thematic as it focuses more on data at a micro level while utilizing frequency counts in measuring the importance of themes as well as allowing for quantitative analyses of the initially qualitative data, thus it seems more advantageous (Braun & Clarke, 2006).

To conclude, interview scripts were transcribed and codes as well as categories were developed to identify themes of critical factors which affect student engagement in the course. The results of the analysis of these three different data sets altogether will be presented in the next section, the results.
5 RESULTS

5.1 Learning Analytics

First of all, the first set of data collected from Udemy learning analytics is presented here in relation to completion rates of the course participants at two different levels: at the course level and at the lecture level. At the course level, the data reveals that the overall completion rates for the course are relatively low: out of the 742 students currently enrolled in the course since it was published in October 2015, only 3.77% (28 students) completed 100% of the course content, while 7% (52 students) completed half or more than half of the course content by watching between 50% and 100% of the lectures. Moreover, from 14.10.2015 until 13.09.2018, 81.26% (603 students) of the students who enrolled on the course had not yet started learning; in other words, they might have dropped out or postponed starting this course, and are thus termed “Non-Active Students” (as classified by Udemy). It is important to note that once the course shifted from being a free online course to one requiring payment to sign up, the enrolment rates dropped off sharply, going from roughly 15-25 students per day enrolling for free, down to 2-5 students per month purchasing the course. Thus, the payment requirement negatively affected the enrolment rates.

When examining the lecture completion rates of all the lectures by looking merely at the number of active students who started a lecture, but did not necessarily finish it, as summarized in Figure 6 below, the data shows that the number of active students who started the lectures consistently decreases as the course progresses; for example, the first lecture gained the highest percentage of active students who started watching it (88%) compared to the last four lectures which gained the lowest rates (20%, 20%, 22%, and 21% respectively). It is important to note that this gradual decrease in the number of active students formulates a curve in terms of frequency distribution.
Figure 6. Percentages of active students who started the lecture but not necessarily finished it, the error bars denote the standard deviation (SD) around the mean.

On the other hand, when examining lecture completion rates by looking at the percentages of students who started and finished the lecture, it is interesting to find out that, as summarized in Figure 7 below, data show a trend that is not consistent or similar to the previous trend of the percentages of active students who merely started the lecture as shown previously in Figure 6. For example, lecture number 13 (No problem or it's okay) achieved the highest lecture completion rate of 91% compared to the first lecture (Intro Lecture) - 57% and lecture 9 (Nice to meet you) - 68%.
5.2 Survey Results

The descriptive statistics of the course engagement survey were analyzed to identify the important responses related to the engagement levels of the participants on the online Arabic course. Looking at the demographic data as summarized below in Table 1, participants who completed the survey questionnaire included 9 males (27.27%) and 24 females (72.73%). Also, participants were predominantly females in their 26s and 35s. Moreover, approximately half of the students, 48.48% reported that they have taken sometimes online courses before. Overall, the demographic data gathered from this survey show that participants in this course are not completely new to online learning format and using technology in a self-paced approach way of learning.

Table 1

Characteristics of Participants
Questions 4, 5 and 6 were aimed at measuring the emotional dimension of engagement using the positive emotional reactions of participants (Fredricks et al., 2004). As depicted below in Figure 8., the participants’ responses to question 4 were consistently high in connection with the students’ positive emotions towards the course content, teaching methods, the video lectures as well as Udemy as a learning platform. The majority of participants answering question 4 reported that they liked or strongly liked the content and topics covered (66.67% & 30.30% respectively), the method of teaching (60.61% & 36.36% respectively), learning using video lectures (45.45% & 54.55% respectively), and using Udemy as a learning platform (57.58% & 30.30% respectively).

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Female</td>
<td>24</td>
<td>72.73%</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>27.27%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>18–25</td>
<td>10</td>
<td>30.30%</td>
</tr>
<tr>
<td>26–35</td>
<td>16</td>
<td>48.48%</td>
</tr>
<tr>
<td>More than 35</td>
<td>7</td>
<td>21.21%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of taking online courses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>13</td>
<td>39.39%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>16</td>
<td>48.48%</td>
</tr>
<tr>
<td>Often</td>
<td>2</td>
<td>6.06%</td>
</tr>
<tr>
<td>Very Often</td>
<td>2</td>
<td>6.06%</td>
</tr>
</tbody>
</table>
In the same fashion, as shown in Figure 9. below (also in Table 2 in the appendix), 60.61% of the participants answering question 5 reported that they agreed and 24.24% strongly agreed that they liked the self-paced learning through the video lectures in the course. Similarly, in question 6, 45.45% agreed and 39.39% strongly agreed that they generally enjoyed learning Arabic in this course. On the other hand, motivation, paying enough attention and taking notes have been used as indicators to assess the cognitive engagement in the survey (Fredricks et al., 2004) which yielded positive results as shown below in Figure 9. For example, regarding paying enough attention in question 7, the percentages of agreement goes up to 36.36% and strong agreement to 27.27%, then neutrality level goes up to 33.33%. It is interesting to find out from the responses to question 8, that taking notes during the online learning in this course was not a common practice among participants as more than half of them, 51.52% responded with disagreement compared to 18.18% agreed and 18.18% strongly agreed. Moreover, when it comes to motivation, 33.33% of participants agreed and 48.48% of them strongly agreed that it was motivating to learn Arabic using this course.
Figure 9. Emotional & cognitive engagement measured in Q5-Q9, the error bars denote the standard deviation (SD) around the mean

Finally, when looking at question 10 which was aimed at finding out from participants’ perspective, as depicted in Figure 10 below, the aspects of future improvements to the course, (The content and topics covered) ranked first with 21.21%, followed by (The quality of video lectures) with 18.18%, while (The way of teaching & presenting the content) as 15.15% came in the third place.
Figure 10. Improvements to the course Q10, the error bars denote the standard deviation (SD) around the mean

5.3 Interviews Results

The analysis of the qualitative data from the interview transcripts revealed a number of design factors that were perceived by participants as affecting engagement with the course, whether positively or negatively. These factors are grouped into five different categories arranged in order of importance, with the first category containing the most important and most frequently mentioned factors by participants, while the last category comprises factors which were the least important and which appeared least frequently in the interview transcripts. As mentioned by participants, these are the categories: (1) Course Content & Resources, (2) Course Structure, (3) Methods of Teaching/Presenting, (4) Video & Graphics Quality, and (5) Students’ Background & Mode of Delivery. Everyone of these categories is broken down into several sub-factors, elements or aspects that can be thought of as strategies when utilizing them in the design plan of an online course (Hew, 2014). An overview of these categories is presented below in Figure 11 in order of importance and later a summary of all categories and sub-factors is presented in Table 3.

Figure 11. Factors affecting student engagement in self-paced online language learning

(1) Course Content & Resources

As revealed by the interview data, the top ranking factor affecting student engagement in this learning context is the content and topics covered in the course as shown above in Figure 11. First of all, engagement is promoted in language learning online in a self-paced
approach by presenting a certain amount of vocabulary and a number of daily phrases for natural real life situations, suitable for the level of learner, and this feature of the course is what most of the students mentioned and emphasized. Furthermore, interview data revealed that providing more conversations and a variety of exercises to help learners improve their communication skills are essential sub-factors/elements for the creation of more engagement along with some interesting facts about the language (such as the history of Arabic). Moreover, some participants asked for more exercises and quizzes in the course and highlighted that this is something they needed more in the course which would cause them to be more cognitively engaged during learning, as perceived by students. Below are some of the students responses in the interviews:

- “I liked the fact that the portions were small and easy to absorb, however, there is a need for more vocabulary, I just learned only few words but I really need more items to learn.” (Student D.H., Netherlands)

- “I liked the amount of things learnt as introductory course, History was extremely interesting too. I want to learn more phrases I could use as a daily vocabulary but also a bit of grammar to kick off the thinking process in the student's head.” (Student S.K., Finland)

Those participants who seemed more interested in learning Arabic were the ones who also asked for additional course content and resources in order to create more engagement. The types of content mentioned were Standard Arabic equivalents to the dialect and suggestions for learning strategies from the instructor. Also, certain resources such as additional collaborative learning practice in a workshop, forum or a video community where people would be able to post the answers to exercises/quizzes as well as supplementary notes to download offline for later reference were mentioned by some participants as below:

- “And maybe if this is possible, I would have liked it more if there was a forum or a video community where people would be able to post their answers?” (Student S., Finland)

(2) Course Structure

Second, the interview data revealed that the structure and way of introducing and organizing the content and topics in the course comes in the second place, in terms of
hierarchy of importance, which could support or impede engagement. For example, participants mentioned various aspects caused them positive emotional reactions with the course. Some examples of these aspects are the course duration in terms of being short and to the point, the pace/speed, the clarity of structure being logical and well organized, the way of structuring the grammar as an embedded component after first introducing the situation to use it, and the comparison of Arabic/English words in one table. To support this, and in order to create more engagement with the course, some students have asked for including some games and interaction, repetition of words in different contexts, and short pauses for students to repeat after the instructor.

- “I like the clear instruction I could follow” also “I like how the instructor showed the writings, very clearly and speaking slowly with repetitions” (Student A.K., Poland)
- “I liked the good sections structure, it was easy to navigate between sections” (Student K.C., Poland)

(3) Methods of Teaching/Presenting

Third, the interview data also demonstrated that engagement is promoted using interesting methods of teaching and also using more fun ways of presenting the content. Additionally, by the simplicity of teaching approach, together with the instructor’s excitement and passion about the topic reflected mainly in her/his tone of voice, smiling, cheerfulness and sense of humor as mentioned by some participants. Some of the participants confirmed the existence of some of these factors while other participants explained that the lack of some of them made them less engaged with the course. In the same way, the voice quality and clarity as well as the instructor’s good level of spoken English resulted in more students’ engagement with the course. Furthermore, the level of challenge and suspense appeared as an essential factor that was missing from the course and that could potentially make students more engaged and as a way to provoke their curiosity to continue learning till the end of the course. Below is an an example of one of the participant’s responses highlighting these aspects;

- “I really liked that the instructor used the sense of humor there, it makes people focused. And the most important thing, his style of explaining things is clear and well planned.” (Student D.J., Poland)
(4) Video & Graphics Quality

Fourth, engagement can be enhanced by the quality of graphics and videos. As shown by the interview data, there are various aspects affecting engagement that are connected to the video and graphics quality, for example, several participants reported their negative emotional reactions due to the lack of colorful graphics and visual effects while some other participants reported that graphics were professional and in a good quality. Moreover, a natural and more relaxed set up in the video filming together with more personalized videos showing the teacher and student interacting together can support engagement. In the same way, talking-head videos and proper music for the background can make learning even more engaging and appealing to learners in this context as some participants highlighted:

- “I did not like the lack of colorful visuals, it was all mono colors, so it was missing attention grabbing thing, for example using different words in different colors” (Student M.B., Poland)
- “The graphics and videos were in good quality” (Student P.T., Poland)
- “You need to have more natural and relaxed set up in the video filming, for example you can sit on a couch, and have a desk with bunch of books on it, and holding a cup of coffee to seem less formal and more friendly… you could also record in a nice room, and I would love if the instructor would imagine the student in front of her/him, not reading from a script. (Student M.V., Russia)

(5) Students Background & Mode of Delivery

The fifth category of factors affecting engagement which appeared in the interview transcripts is connected to students background and the self-paced learning as a mode of delivery of instruction. In particular, relative language difficulty; Arabic is a language that is very different from the native languages of most of the participants in this sample of study who came from European languages background. Participants have mentioned various types of difficulties they faced in learning Arabic during this course, such as the alphabet and way of writing from right to left as being very unique and peculiar compared to European languages. This language difficulty has been highlighted by some participants as a reason behind the decreasing level of engagement of students with the course. On the other hand, some participants mentioned that their motivation and interest in learning
Arabic itself has caused them to be more engaged in the learning process, while other participants blamed their previous knowledge for their lack of engagement and lack of putting efforts to learn Arabic. Furthermore, self-paced learning has been mentioned by some participants as more engaging for them compared to other formats of delivery of instructions, like face to face for example. Additionally, the ability to contact the teacher by Skype or messenger was mentioned on some rare occasions by very few of the participants as a way of supporting engagement in the self-paced mode of instruction.

- “The challenges I faced, not about the course but the language itself, it's a really difficult language for me to learn even though the course was basic and well designed but the complexity of the language as it is very different from my native language” (Student K.C., Poland).
- “I like self-paced learning without anyone watching me, I took similar courses before by myself and because I'm too shy and I don't like people to judge me so I like learning on my own” (Student M.B., Poland).

Table 3

Summary of Categories and Factors Affecting Engagement

<table>
<thead>
<tr>
<th>Categories of Factors</th>
<th>Sub-Factors (Elements or Aspects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Course Content &amp; Resources</td>
<td>Vocabulary and daily phrases for natural real life situations</td>
</tr>
<tr>
<td></td>
<td>Conversations and variety of exercises</td>
</tr>
<tr>
<td></td>
<td>Interesting facts about the language like history of Arabic</td>
</tr>
<tr>
<td></td>
<td>Exercises and quizzes</td>
</tr>
<tr>
<td></td>
<td>Giving suggestions and strategies of learning</td>
</tr>
<tr>
<td></td>
<td>Additional resources like Standard Arabic equivalents to the dialect</td>
</tr>
<tr>
<td></td>
<td>Collaborative learning practice in a workshop, forum or a video community</td>
</tr>
</tbody>
</table>
- Additional notes to download

2- Course Structure
- The clarity of structure being logical and well organized, sequence of topics
- The course duration being short and to the point
- The pace/speed
- The way of structuring the grammar as an embedded component after first introducing the situation
- The comparison of Arabic/English words in one table
- Games and interaction
- Repetition of words in different contexts
- Short pauses for students to repeat after the instructor

3- Methods of Teaching & Presenting
- Interesting methods of teaching & fun ways of presenting the content
- Simplicity of teaching approach
- The instructor’s excitement and passion about the topic
- Instructor’s smiling, cheerfulness and sense of humor
- The voice quality and clarity
- The instructor’s good level of spoken English
- The level of challenge and suspense to provoke curiosity

4- Video & Graphics Quality
- Colorful graphics and visual effects
- Natural and more relaxed set up in the video filming
- Personalized videos showing teacher and student interaction
- Talking-head videos
- Proper music for the background
Finally, question (4) in the interview about the use of learning strategies, which was designed to measure cognitive engagement, gave an insight into the students’ cognitive engagement with the course, together with the strategies they have used to overcome the challenges they faced when learning in a self-paced environment. Examples of these strategies are rewinding videos, taking some notes, and comparing languages like Finnish and Arabic.
6 DISCUSSION

6.1 Findings of the Study and Theoretical Implications

In this section, I will discuss the findings of this study which suggest several implications on the factors affecting engagement in the self-paced online language learning context. These factors are also summarized in Figure 12 below. Each research question will be tackled in turn; to answer the first research question:

(1) What factors affect engagement in a self-paced online language learning context?

The exploratory investigation of student engagement in this context helped to uncover the potential issues in relation to engaging students in learning on this type of course and to discover whether the majority of these problems are mostly related to content, method of delivery of instruction, online learning as a context, the lack of peer collaboration or any other factors that might have hindered engagement. To begin with, I examined all the results gained from the three different data sources in the study, then combined and compared all of them in order to draw some logical thematic conclusions while referring back to the literature review to find the similarities and differences revealed by other studies.

Firstly, the purpose of the analytics data on lecture engagement provided by Udemy is to offer better insights into the course content in order to identify which of the lectures or lessons are more popular and engaging, as well as to detect where students usually drop off, as shown in Figure 4 and Figure 7. This has also been cited as the purpose of learning analytics by various studies (Ferguson, 2012; Long et al., 2011; Rubio et al., 2018; Sclater et al., 2016). This data on completion and dropout rates at the lecture level based on content/topics highlights the importance of this factor as one that strongly affects engagement; however, it is merely an indicator of behavioural and sometimes cognitive engagement (Hew, 2014) and is not a good indicator as to whether students liked or disliked these lectures having completed them. Therefore, to deal with this issue, a mixed approach was taken by utilizing both quantitative and qualitative data, as well as data triangulation in order to solve this problem.
It is interesting to note that the analysis of the survey results shows that the majority of the students reported positive emotions towards the course content, which is an indicator of emotional engagement - 66.67% of them liked and 30.30% strongly liked the content and topics covered as shown in Figure 8. More interesting to note and quite surprisingly, the interview data also revealed that the course content and topics covered appeared not only as factors that strongly affect the students’ behavioural and emotional engagement in this learning context but also as the top ranking among all the other factors appearing in the data analysis as shown in Figure 12. Moreover, the findings from the interview transcripts suggest that content strongly affects cognitive engagement above and beyond the behavioural and emotional aspects. To further explain this aspect, the platform analytics reflect that certain topics, specifically in the middle of the course, such as lecture 11 and 13, achieved higher completion rates in comparison with the first four lectures. This again emphasizes the role of content topics as a means of triggering student interest and fostering engagement in the learning process despite the fact that as the course progresses the number of active students taking the course decreases, as shown in the analytics results in Figure 6. This data triangulation (Shenton, 2004) measured the three aspects of engagement as a multidimensional construct (Fredricks et al., 2004) and yielded a deeper insight into the content and topics as a top ranking factor affecting student engagement in this learning context. Furthermore, additional course resources appeared as a factor that affects engagement, something which was previously stated in other studies (Sull, 2012; Hew, 2014); however, in those studies, additional course resources were mentioned less frequently than the content and topics and were considered to be another element that enhances the content.

In the same way, analytics data indicated that course duration is another key factor that affects engagement, as shown in Figure 6. Here we see that as the course progresses, fewer active students continue watching the lectures causing behavioural disengagement. This factor has also been noted by Jordan (2014) who found that the number of students in MOOCs decreases over time and that this decrease is influenced by the course length and duration. In addition to that, it is also interesting to note that the 7% completion rate of the whole course in this study seems to be in line with Jordan’s study, which found that the overall completion rates in MOOCs range between two to ten percent (Jordan, 2014). More research is still needed to investigate the reasons behind the decreasing number of active students. Additionally, during the interviews, the majority of the participants who did
complete the course mentioned liking the course structure as it was well organized, logical, and in their view, short and to the point. In brief, this study finds that course duration is recognized as a major factor affecting mostly emotional and behavioural engagement while coming in second place in terms of importance after content and topics of the course.

As the survey data demonstrates, teaching methods and how the content is presented have been seen to be a contributing factor affecting emotional engagement since 60.61% of respondents like this and 36.36% strongly like this. Mirroring the survey results, in the interview, participants stated that the pedagogical aspect largely impacted emotional and cognitive engagement and so ranks in third place in terms of importance right after the course structure and length, as shown in Figure 12. To further illustrate this point, the instructor’s enthusiasm, upbeat manner and sense of humour frequently appeared in the interview transcripts, and have also appeared in previous studies (Imlawi et al., 2015; Hew, 2014) as factors affecting engagement within the online learning context. In addition, the level of challenge was highlighted by some of the participants as an engaging factor, which is in line with the conclusion of several researchers in other recent studies (Cakir, 2013; Ma et al., 2015; Howard et al., 2016).

As expected, video and graphics quality appeared in the interview data as a factor that affects engagement, yet surprisingly it came in at fourth place after teaching methods, even though it was anticipated that it would rank higher in terms of importance. This means that the engagement level of the course participants in this specific learning context was impacted largely by the content, the structure, and the manner of presenting and teaching more than the technical aspects of graphics and videos. It is also important to note that according to the policy and regulations of Udemy as a platform for paid and free courses, their technical team does not approve publishing online courses that do not meet their quality standards from a technical perspective in terms of graphics, video and audio quality. This could be the reason why the graphics and video quality was not mentioned very frequently in the interview scripts, despite there being room for some further improvement in this area. This also saves the burden and effort of further investigating whether the video content published by instructors on Udemy is engaging enough from a technical perspective or not.

Among the factors identified in the interview data is the students’ background, skills and previous knowledge as it influences their engagement with the course; it has also
been indicated by other studies (e.g. Milligan et al., 2013), and confirmed by Lazareva’s study (2017), that the ability, skills, knowledge, and the previous experience of students in the use of technology affect engagement when learning through technology. Moreover, in this learning context, the mode of course delivery, i.e. self-paced learning has been recognized as engaging by some of the students. This was confirmed by the survey results where 60.61% of the participants reported they agreed and 24.24% strongly agreed that they liked this feature of the course. However, these figures related to the mere 7% of students who completed half or more than half of the course; therefore, more research is needed to ascertain the perspective of those who dropped out and did not complete the course as to whether they found the self-paced learning mode an engaging factor or not.

Likewise, it is quite interesting to note that the findings of this study have some similarities and differences compared to the study done by (Hew 2014), for example, some factors like the instructor accessibility and passion, as well as the course resources appeared in both studies as affecting student engagement in online learning contexts. On the contrary, problem-centric learning, peer interaction, and active learning appeared in Hew’s study but not in the present one. This might be the case due to the fact that Hew’s study examined MOOCs in the disciplines of programming languages, literature, and arts & design while this study looked at language learning as a discipline and content which highlights the importance of discipline in studying engagement.

Finally, since Udemy does not support real time interaction between instructors and learners, it was expected that participants would highlight the importance of having a synchronous communication channel to support language practice with the teacher and peers as a factor affecting engagement with the course. This has also been alluded to in a study by Das (2012) as the instructor’s presence and has also been further highlighted in a study by Oztok, Zingaro, Brett, & Hewitt (2013), in which the authors suggest that the use of both synchronous and asynchronous tools together provides better opportunities for students to gain a meaningful learning experience. Such alternative communication channels offer students the chance to have informal discussions about the learning tasks and activities (Lazareva, 2017). In addition to that, the results of the data analysis of this study confirmed Dixson’s (2010) view that integrating some external communication tools or channels would affect student engagement. However, this factor was ranked lowest in terms of importance. This might mean that students taking a self-paced online language course are aware of the lack of real time communication and have their own strategies to
overcome this challenge. Evidence for this appeared during the interviews when participants were asked “What were the learning strategies you used in this course to overcome the lack of teacher support and peer collaboration?” This question was aimed at investigating their cognitive engagement, yet it also gave an insight into how students learn from self-paced courses. Further research is needed to find out more about these strategies for self-paced language learning.

(2) How to support engagement in a self-paced online course for learning Arabic?

According to the findings of this study, Instructional Designers, Course Developers and Instructors who are aiming at supporting and promoting engagement in online self-paced language learning environments need to pay high level of attention to the content and topics covered in the course in the first place. Next to that, the course structure and duration, then the teaching methods as a pedagogical aspect, and finally the quality of video & graphics have to be tackled in order. In other words, these five factors have to be dealt with in order of priority and importance and not just randomly. That means, focusing on video graphics and teaching methods while ignoring the course structure and the content could potentially hurt the engagement level with the course. This way of dealing with these factors in terms of importance will help to present the course in a more engaging and interesting manner to meet student’s expectations and to increase the completion rates of active learners at the lecture and course level.

Furthermore, there is a need to match the course content to the student’s level and background as a target audience by conducting learning needs analysis before designing an online language course to assist in selecting the right topics that meet the students’ background. This will also promote even higher level of engagement as the course will better meet students’ expectations and help understand their background during the design phase.

Additionally, further analysis of the survey and the interview data in terms of future improvements to the course in order to support engagement shows that the content and topics covered ranked the top as an item requiring some improvement, followed by the quality of video lectures and then the way of teaching & presenting the content. This highlighted the improvement aspect of this current course and gave an insight on what to improve, thus it is worth sending similar questions in a survey by Educators/Instructional
Professionals to online students to get their perspectives on which aspects require future improvements for their online courses in order to promote further engagement.

Finally, engagement could be further supported by integrating a synchronous communication tool like Skype or an external forum to create real time interactions and collaboration among course participants and the instructor (Dixson, 2010). Based on the findings of this study, this is an important step for teachers delivering instruction online to be aware of. Similarly, since time manifested in the course duration and length of the video lectures has been recognized as a major factor affecting mostly emotional and behavioral engagement, therefore during the design phase of the course, Instructional Designers need to plan well the course duration and length of video lessons not to exceed 5-10 minutes as confirmed in the findings and emphasized by some of the participants to maintain students engagement throughout the whole course and to avoid causing boredom and hence students’ dropout.

(3) How to improve the design and development of Self-paced online language courses?

Previous studies (Perifanou & Economides, 2014) highlighted that the design, development and implementation of MOOCs for language learning have not been sufficiently investigated and as also mentioned by other scholars (Eccles & Wang, 2012), it is difficult to design useful programs and to improve the student engagement if the aspects of student engagement were not better understood. Therefore, the design and development aspects came as one of the secondary aims of this study by getting a deeper understanding of the factors affecting engagement and subsequently using this context-related knowledge to support engagement and thus improve the design aspects of self-paced online language courses. As a result, based on the knowledge gained from answering the first and the second question about the factors affecting behavioral, emotional and cognitive engagement and how to support engagement, I will be proposing recommendations for improving the design of online language courses delivered in a self-paced mode of instruction as summarized below:

First, as mentioned in a study by Rienties et al. (2018), effective communication with native speakers of the language being studied is what learners want to accomplish as a major learning outcome when learning a foreign language, this means building a communication skill like speaking is the main goal of students enrolling in language courses. Moreover, as revealed in this study, it seems that learners who are taking that
approach of self-paced learning online are more independent, adaptable and self-directed while focusing and prioritizing things like learning the suitable content in terms of vocabulary, understanding the grammar and trying to grasp the pronunciation over other issues like concerns about collaboration and real time communication. Therefore, there is a need to plan the course topics carefully after conducting comprehensive research and learning needs analysis on learners expectations from the course based on their level and background in order to enhance the design of online language courses.

Second, developing more talking head videos is required to improve the design of such courses. Moreover, filming such videos need to be done in a more relaxed manner with more natural speaking rather than scripted monotonous speech as mentioned by some of the participants while also showing interaction between the course instructor and students in the video would be a good improvement as a strategy. In other words, less lecturing style and more conversational video content is needed to improve the design of courses and to bring more engagement.

Third, innovating the teaching methods by selecting more fun ways of presenting the content, with a simple approach while reflecting the instructor’s excitement and passion about the topic can improve the design of any self-paced course. Finally, as revealed in this study, integrating some communication tools like Skype, Facebook Messenger, WhatsApp to create a sense of collaboration and learning practice would improve the design of any self-paced learning environment and further support learning in this context which was also confirmed by Dixson’s study (2010).
Figure 12. Summary of Factors Affecting Student Engagement

6.2 Practical Implications

In this section, I will provide a summary of the practical guidelines from the findings of this research in order to support Educators and Professionals in the field to promote and enhance students' engagement in learning contexts and also to improve their course designs. The below guidelines can serve as a framework that can be utilized in designing and developing online language courses and improving the existing ones:

1) There is a need to add suitable vocabulary and daily phrases for natural real life situations together with a variety of conversations for practice.

2) Instructors should also consider presenting some interesting facts about the language they teach online such as its similarities and differences to other languages.

3) Exercises and quizzes are needed to help learners check their learning progress.

4) Instructor’s smiling, cheerfulness and sense of humor together with interesting methods of teaching & fun ways of presenting the content are needed to engage learners and break the sense of boredom associated with self-paced online learning.
5) Instructors need to present the course structure in a logical and well organized sequence of topics at an appropriate pace/speed

6) The grammar should be embedded in the learning situation being discussed at a certain topic rather than being the focus of the topic

7) Repetition of words in different contexts together with short pauses for students to repeat after the instructor are essential components in the course design

8) If the platform allows, then collaborative learning practice can be integrated into the course using external links to Skype, Facebook or WhatsApp groups

9) Giving suggestions and strategies of learning can be helpful to novice learners

10) Finally, personalized video content showing teacher and student interaction with talking head videos create a more engaging learning experience

6.3 Evaluation, Validity, Reliability and Ethics

To evaluate this study, I believe it would have been stronger and more complex if I have chosen a bigger sample of the population and included some of the students who have dropped out and those who have finished less that 50% of the course to gain better insight on the factors affecting engagement from a wide variety of perspectives. It has been a big challenge to recruit this sample of the participants, therefore, this study could have been of a better quality if more time was dedicated to target a larger and more diverse sample of the population. Not only a bigger sample of the population was missing but also a different sample with no experience in taking online courses before could have added an additional value.

The present study ensured to enhance validity and reliability through utilizing instruments that were previously validated (Fredricks et al., 2011; Dixson, 2015; Henrie et al., 2015), in order to assist in building the questionnaire survey items. The instruments mentioned in these studies have been already piloted, modified and reformatted in order to maintain quality assurance measures and to increase the dependability of the study. Similarly, the survey questionnaire collected data anonymously without revealing any personal data of participants.

Moreover, in order to achieve construct validity by measuring what this study set to measure, an exploratory research nature using an inductive approach has been selected to conduct this study. Likewise, to achieve external validity, the purposive sampling has been
chosen to have a more representative sampling of the whole population and in order to be able to generalize the research findings. In addition to that, descriptive validity was established by having another investigator to look at the data and see if they can gather evidence by coding it similarly, results were almost the same in terms of coding. In the same fashion, interpretive validity has been ensured using the participant’s feedback or member checking strategy by discussing the findings with participants at the end of the interview and asking their agreement and approval of the interview results to see if there was any misrepresentation or inaccuracy (Creswell, 2014). Thus, using low-inference descriptors to gain further trustworthiness.

In the same way, researcher’s bias can bring questions about transferability or generalizability in any study. Therefore, it is very crucial to acknowledge that my perceptions or position in this study might have an impact on the data collection, analysis and/or interpretation (King & Mackey, 2016). I have designed and developed this Arabic course for teaching basic Arabic online in order to develop my skills in designing online courses. This bias might have impacted the data collection as I was looking for deeper insights into engagement while collecting data to gain better and comprehensive knowledge in this area. Apparently, I have gathered a lot of data, I did my best to include the engagement-related and exclude the non-relevant ones which came as side notes from participants. This, however, did not affect the analysis or interpretation of the data since I relied on statistical descriptions and direct quotes from participants to explain the results. That means, by using mixed approach of quantitative and qualitative alongside direct quotes from participants, I managed to triangulate the data in order to improve the reliability of this study.

Another method to maintain reliability and to avoid researcher’s bias, as a researcher, course instructor and developer, I have paid sufficient and equal attention to the factors influencing engagement and disengagement with the course in order to minimize being biased towards what participants liked versus what they disliked in the course. Additionally, participants bias was taken into consideration during the data collection stage, and in order to control and minimize this bias, participants were encouraged to share their thoughts, feelings and opinions freely and honestly without having to worry about the instructor’s emotional reactions towards their feedback, whether it was positive or negative.
As for Ethics, first of all an approval and prior consent from the participants was sought to collect data using the platform analytics. This was accomplished by posting on the course forum, in July 20, 2018 a message to all students notifying them with the intent of the course instructor to utilize the learning analytics data in this research anonymously, and giving them a chance to withdraw if they disagree. (see Figure 13. in the appendix).

Second, the selected sample of the research participants were requested to sign a prior consent form before participating in the study, filling the survey or answering the interviews questions. Finally, the interviews ensured confidentiality of the participants by coding their names using initials to hide their identity. In addition, the questionnaire items contained very limited demographic type of questions, it only included questions about gender, age, and frequency of taking online courses.

### 6.4 Limitations and Future Research

The answer to the first research question in this study helped to draw a complete picture of the various factors affecting engagement in this learning context within a hierarchy of importance, however, more research is required to find out from the disengaged and dropped out students the reasons behind their lack of engagement with the course from the beginning. This could be also beneficial to Instructional Designers and Course Developers to get to know more about the disengaging factors.

This research investigated solely the student who completed 50% or more of the course, therefore, further research is needed to find out the engaging/disengaging factors from those who have completed less than half of the course. Whether they have got less patience to continue a one-hour course, lost their interest in learning from this course, did not like the course structure or for any other reason. Hence, further research is still needed to understand what would make them retain their level of engagement throughout the whole course and continue till the end.

In addition to that, there is also a need to investigate how students learn from self-paced courses in terms of strategies they use since the analysis of the interview data revealed some of these strategies but did not focus on them as this is beyond the scope of this research. Finally, a longitudinal study of the same group of students might be needed in order to investigate what would make them more engaged at intermediate and advanced
levels of learning Arabic. This might reveal different factors affecting engagement. Additionally, there is a need for more research to gain better insights on the two different groups who are signing up for self-learning courses on Udemy, the group who paid versus the group who signed up for free.

Despite these limitations, the findings of the current study can provide a useful framework to guide professionals in the field of education and education technology. To conclude, this research project has brought in many ideas for future research, thus the present study could be expanded into a possible PhD thesis. As a result, the following could be included in future research:

1. What factors affect students decision to drop out in self-paced online learning?
2. How engagement can be retained at early stages in online learning?
3. What strategies self-paced learners employ to overcome the lack of collaboration and synchronous communication?
4. How does the level of learner affect engagement in online learning?
7 CONCLUSION

This study examines how engagement is promoted in online self-paced foreign language learning contexts and uncovers to what extent the course content, resources, pedagogic practices, quality of video technology and students’ background affect the engagement of the online language learners. The findings of this present study reveal the factors that affect student engagement in self-paced online language courses which are domain-specific, hence a framework has emerged as a result. This framework can support and guide Professionals in the field to design a better online language courses for self-paced learners.

As for the meaning of this study and its societal impact, it has broadened the research body and expanded its knowledge in the online learning field to go beyond general tendencies and principles. This research is different from other studies on engagement as it is one of the few studies that has gone beyond the measurement of student engagement through observable measures such as the participation of students and their time spent on the task in order to assess engagement as a multidimensional construct (Natriello, 1984; Brophy, 2004). Moreover, in order to find out if the engagement is content and domain specific or merely reflects a general tendency (Eccles & Wang, 2012), this study integrated domain-specific measures and deeply examined the factors that could help Online Course Developers, Instructional Designers and Instructors to promote a stronger engagement within an online self-paced course, thus filling a research gap within the online language learning context of study.

Furthermore, the sample selected in this study included 60 participants out of 742 students currently taking the course. These 742 students came from more than one hundred countries, different age groups, with different backgrounds, all learning Arabic with the absence of any active involvement of an instructor and a lack of real-time communication (either between students and the course instructor, or among the students themselves), and so represented a unique and contextualized case. Apart from the previously mentioned complex contextual conditions and challenges, learning on the basis of an online self-paced course for beginners in Arabic, a language which is believed to be one of the most difficult to learn, added another layer of complexity to the phenomena under study and yielded significant findings.
On the basis of these findings, this study brings forth several recommendations for teachers and course developers who aim at supporting and promoting engagement in self-paced online learning contexts by solving several design challenges for individual instructors attempting to develop courses on Udemy. It recommends paying sufficient attention to improving the content and topics covered in the course as a top priority in terms of importance, followed by the structure and duration, then the teaching methods as a pedagogical aspect and finally the video and graphics quality. Considering all of these factors could help to shape the design of a course to produce one that is more engaging and interesting for students. Moreover, the findings presented in this study offer solutions to instructional designers on how to design more engaging language content to be delivered online in a self-paced learning mode without the instructor’s presence to lead virtual or live classrooms.

It is important to note as well that, in order to achieve further engagement in this learning context, there is a need to integrate some communication tools like Skype or another external forum for collaboration so as to include synchronous communication and to create a sense of community, something which remains a challenge to achieve in such contexts (Dixson, 2010). This will also support real time interaction between instructors and learners to provide opportunities for communicative language practice with the teacher of the course, or collaborative practice with peers.

Lastly, the findings of this research have also shown that a self-paced way of learning might not be challenging for all types of learners alike. This might be the case due to the fact that this sample of the population has taken online courses before so are not completely new to online learning. That means learners are able to become accustomed to learning by themselves and develop their own strategies to maximise the benefits of this way of learning. To conclude, the key message this research has clearly delivered is that the course content and resources as well as the methods of structuring, teaching, and presenting the content play a major and very essential role in engaging students within this learning context, and are of paramount importance compared to any other factors connected to technology and/or manner of learning. Last but not least, focusing more on technological aspects and less on content, structure and teaching methods could potentially bring down the engagement level in such learning contexts which is opposite to what is believed to be the case.
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APPENDICES

APPENDIX 1: Course Ratings, Reviews, & Lecture Engagement

APPENDIX 2: The Survey, Means and standard deviations of engagement items

APPENDIX 3: Permissions from students to collect data for this research.
APPENDIX 1

Course Ratings, Reviews, & Lecture Engagement

Figure 1. Course Ratings

Figure 2. Reviews and Opinions
Figure 3. Lecture Engagement
APPENDIX 2

The Survey, Means and standard deviations of engagement items

Course Engagement Questionnaire

Course Engagement Scale – Behavioral, Emotional, and Cognitive Engagement

1) How old are you in years?
2) What is your gender?
3) How often do you take online courses?
4) How do you feel about the following aspects of this course?
   a) The content and topics covered
   b) The way of teaching
   c) Learning using video lectures
   d) Learning using "Udemy" platform
5) I liked learning by myself by just watching the video lectures in this course
6) Overall, I enjoyed learning Arabic in this course
7) I paid enough attention in this course
8) I took notes during learning in this course
9) It was motivating to learn Arabic using this course
10) Which one of the following aspects of the course needs "more" improvements?
    a) The content and topics covered
    b) The way of teaching and presenting the content
    c) The quality of video lectures
    d) All of the above equally
    e) None of the above

Table 2

Percentages, Means, and Standard Deviations of Engagement items
<table>
<thead>
<tr>
<th>Questionnaire Items</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 5: I liked learning by myself</td>
<td></td>
<td></td>
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<tr>
<td>STRONGLY LIKE</td>
<td>8</td>
<td>24.24%</td>
</tr>
<tr>
<td>LIKE</td>
<td>20</td>
<td>60.61%</td>
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<tr>
<td>NEITHER LIKE NOR DISLIKE</td>
<td>3</td>
<td>9.09%</td>
</tr>
<tr>
<td>DISLIKE</td>
<td>2</td>
<td>6.06%</td>
</tr>
<tr>
<td>STRONGLY DISLIKE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Q 6: Overall, I enjoyed learning Arabic in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY LIKE</td>
<td>13</td>
<td>39.39%</td>
</tr>
<tr>
<td>LIKE</td>
<td>15</td>
<td>45.45%</td>
</tr>
<tr>
<td>NEITHER LIKE NOR DISLIKE</td>
<td>5</td>
<td>15.15%</td>
</tr>
<tr>
<td>DISLIKE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>STRONGLY DISLIKE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Q 7: I paid enough attention in this course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY LIKE</td>
<td>9</td>
<td>27.27%</td>
</tr>
<tr>
<td>LIKE</td>
<td>12</td>
<td>36.36%</td>
</tr>
<tr>
<td>NEITHER LIKE NOR DISLIKE</td>
<td>11</td>
<td>33.33%</td>
</tr>
<tr>
<td>DISLIKE</td>
<td>1</td>
<td>3.03%</td>
</tr>
<tr>
<td>STRONGLY DISLIKE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Q 8: I took notes during learning in this</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY AGREE</td>
<td>6</td>
<td>18.18%</td>
</tr>
<tr>
<td>AGREE</td>
<td>6</td>
<td>18.18%</td>
</tr>
<tr>
<td>NEITHER AGREE NOR DISAGREE</td>
<td>3</td>
<td>9.09%</td>
</tr>
<tr>
<td>DISAGREE</td>
<td>17</td>
<td>51.52%</td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>1</td>
<td>3.03%</td>
</tr>
<tr>
<td>Q 9: It was motivating to learn Arabic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY AGREE</td>
<td>11</td>
<td>33.33%</td>
</tr>
<tr>
<td>AGREE</td>
<td>16</td>
<td>48.48%</td>
</tr>
<tr>
<td>NEITHER AGREE NOR DISAGREE</td>
<td>6</td>
<td>18.18%</td>
</tr>
<tr>
<td>DISAGREE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Q 10: Which one of the following aspects of the course needs 'more' improvements?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The content and topics covered</td>
<td>7</td>
<td>21.21%</td>
</tr>
<tr>
<td>The way of teaching &amp; presentations</td>
<td>5</td>
<td>15.15%</td>
</tr>
<tr>
<td>The quality of video lectures</td>
<td>6</td>
<td>18.18%</td>
</tr>
<tr>
<td>All of the above equally</td>
<td>2</td>
<td>6.06%</td>
</tr>
<tr>
<td>None of the above</td>
<td>13</td>
<td>39.39%</td>
</tr>
</tbody>
</table>
APPENDIX 3

Permissions from students to collect data for this research.

Figure 13. Permission from students to collect data from the analytics of Udemy.

The below is the Pre-Consent Form used to gain permission from students to collect data using the survey and the interview.

Data Collection Consent Form

Research Title: How to promote engagement in an online self-paced foreign language learning?

Program Title: Learning and Education Technology Master’s program

University & Department: Education Technology Research Unit, University of Oulu, Finland.

Researcher’s Name: Tharwat Wasfy

THE PURPOSE OF THE STUDY
You are being asked to participate in a research study which aims at learning about the engagement in online learning context, and to discover the factors that affect it as well as how to improve the engagement level in self-paced online language learning environment.

YOUR CONSENT TO PARTICIPATE

I hereby give my prior consent to participate in this study and to the researcher to use the data gathered during the interview in a confidential manner for the purpose of completing his research for the Master’s Thesis in Learning and Education Technology at University of Oulu in Finland.

DATA HANDLING AND STORAGE

Data will be stored electronically using voice recording format and transcribed in Microsoft and Google files offline and online. Participant’s personal data will be anonymized, also no demographic or personal data of participant such as name, gender, age or any other personal data that could identify the individual or group to whom that data refers will be shared or disclosed by the researcher.

My signature below indicates that I have agreed to participate in this study and to give my feedback in an interview as guided by the researcher. I have read and understand the information above.

_________________________          ________________________________
Signature of Participant                  Participant’s Name

_________________________          ________________________________
Date                                      Date