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ENHANCING GRAMMAR LEARNING MOTIVATION: A PRELIMINARY STUDY ON A MOBILE-ASSISTED INSTRUCTION TOOL

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A B S T R A C T

In the emerging field of language learning research, technology has played a significant role. However, recent empirical studies have highlighted a lack of attention to grammar learning, particularly in designing instructional materials and motivational frameworks for efficient mobile-assisted grammar learning tools. This paper presents the results of a preliminary study that aimed to investigate learner motivation when using a mobile-assisted tool for learning the Subject-Verb Agreement (SVA) rule in English language grammar and to examine the differences between male and female students in terms of their motivation when experiencing the tool. The study applied the Attention-Relevance-Confidence-Satisfaction (ARCS) model in the instructional design under the name, SVATHLON 2.0. It was a mobile-friendly Google site page that was developed to teach students SVA in a more engaged and gamified environment. The research employed a descriptive quantitative design, involving a questionnaire that was distributed to 111 undergraduate students who enrolled in a compulsory English language course for the semester 1 programme at a public university. The findings demonstrated that most students showed positive motivation after using SVATHLON 2.0 while learning SVA. The results of this preliminary study suggest that SVATHLON 2.0 could be an effective tool to enhance learner motivation, with positive responses from both male and female students. This study

underscores the potential of gamified instructional materials to address the need for innovative and engaging approaches to grammar learning, particularly in the context of technology-assisted language education.

1. Introduction

Student motivation is critical in the learning process, particularly when it comes to complex or intricate subjects like grammar. Motivation drives engagement, effort, and persistence, which are key elements for successful learning. When motivated, students tend to pay more attention, process information more efficiently and are more likely to apply strategic efforts and better comprehend the learning material. Furthermore, grammar is an essential component of any language, and building a strong foundation in grammar is key to effective communication. To ensure meaningful communication, it is important to be able to construct proper sentences by using basic grammatical rules. However, traditional ways of teaching grammar can often be viewed as mundane and challenging, causing students to lose interest and motivation (Kumayas & Lengkoan, 2023). By finding measures to improve student motivation while learning grammar, students would likely find the process more enjoyable and rewarding, leading to a better grasp of the language and improved communication skills.

Despite the proliferation of mobile-assisted language learning tools and educational websites that provide grammar instruction materials, empirical research examining their impact on student motivation in grammar instruction remains scarce (Brown et al., 2020; Lee et al., 2022). Consequently, educators and researchers are left with unanswered questions regarding the effectiveness of these tools in enhancing the learning experience and inspiring learners to grapple with intricate grammatical structures, specifically on the Subject-Verb Agreement (SVA) rule. SVA involves the use of relevant grammatical structures that are needed by language learners to master for them to be able to perform language tasks effectively (Febriyanti, 2019). The learners need to comprehend the rules of SVA so that they will be able to construct the sentences for the message to be delivered successfully to the recipients. Despite the apparent simplicity, SVA continues to pose difficulties for ESL learners in Malaysia due to the absence of SVA rules in most native languages in Malaysia.

Therefore, the present study is to fill this void by conducting a preliminary investigation into the motivational dynamics of a mobile-assisted instruction tool, referred to as SVATHLON 2.0. in learning SVA. Drawing inspiration from the Attention-Relevance-Confidence-Satisfaction (ARCS) model of motivation (Keller, 2016), SVATHLON 2.0 introduces an engaging and gamified approach to SVA rule instruction. The purpose of this study is to investigate the students' level of motivation in ESL classroom by referring to the aspect of ARCS in Kellers' instructional design model by answering these research questions:

RQ1: What are the students' levels of motivation in the aspect of ARCS while using SVATHLON 2.0 to learn the SVA rule?

RQ2: Is there any gender difference on the students' motivation in the aspect of ARCS while using SVATHLON 2.0 to learn the SVA rule?

2.   Literature Review

2.1   The Correlation between the Teaching of Grammar in ESL and Motivation

Grammar serves as the backbone of language proficiency and communication as its role is essential for all four language skills: listening, speaking, reading, and writing. Learning grammar may enable the learners the ability to fundamentally use the language efficiently based on the knowledge (Al Abri, Al Seyabi, Al Humaidi & Hasan, 2017).   A strong grasp of grammar is essential for ESL learners to express themselves accurately and comprehensively in both spoken and written English (Bardovi-Harlig et. al, 2005). However, grammar is a complex element in a language which often makes the learners struggle to grasp the concept successfully. Due to this, lower proficiency learners are often confronted with frustration if they are unable to produce the language as how they perceive they should. This could negatively affect their motivation to achieve the language tasks.

1.   The concept of learners' motivation is used to describe the level of attention and effort the learners invest in a range of activities, some of which may not align with their teachers' preferences. This motivation is rooted in the learners past experiences with subjects, especially those experiences that influence their willingness to participate in language learning activities and the reasons influencing their engagement in the classroom. Winne and Marx (1989) offer a definition of motivation that encompasses both a condition necessary for effective instruction and an outcome arising from it. Gardner (2010) provides additional support for the importance of motivation crediting it as a key factor in achieving proficiency in second language acquisition. Considering this view, it becomes clear that the motivation of learners plays a critical role in the realm of successful language acquisition. This is supported by (Dörnyei, 2009) who emphasized that student motivation is widely recognized as a critical factor influencing language learning outcomes. Motivated learners are more likely to persist in their studies, invest effort in learning tasks, and achieve higher levels of proficiency as compared to those who possess lower motivation.

2.   In the context of grammar instruction, motivated students are more inclined to actively engage with grammar rules, practice exercises, and seek opportunities for improvement (Deci & Ryan, 2000). In the teaching of grammar, students across levels of education are found to be lacking in motivation as the topic is perceived to be dry (Thornburry, 1999). Previous research has suggested that learners' low motivation in learning grammar often stems from unengaging and uninteresting lessons in ESL classrooms (Wang, 2010). Most ESL classrooms in the tertiary institutions employed traditional approaches where the teaching of grammar is still carried out very traditionally making the students lose motivation when the lecturers used traditional methods such as the 'chalk-and-talk' approach which can be dull and predominantly teacher-centred. Most of the time, the students are busy copying the notes given without concern for whether they understood what has been taught by the lecturer (Chen & Li, 2010).

3.   To boost the learners' motivation, Kumayas and Lengkoan (2023) emphasize the need for teachers to create interesting grammar lessons to evoke enthusiasm among learners. There are several ways for teachers to encourage motivation in grammar instruction class. Firstly, making grammar instruction relevant to learners' needs and interests can enhance motivation. Teachers

should connect grammar lessons to real-life communication scenarios, highlighting how mastering specific grammar rules can improve their language skills and overall communication (Dörnyei & Ushioda, 2011). Besides, allowing students to have some control over their learning process, such as selecting topics or activities, leads to improvement in motivation. Autonomy encourages a sense of ownership and responsibility for their progress (Deci & Ryan, 2000). More mature students like university students prefer to learn according to their current interest and convenience (Ganapathy, et. al, 2015). Feedback and praise are effective strategies the teachers can employ to boost motivation among learners. By providing timely and constructive feedback, along with praise for effort and improvement, can boost students' self-esteem and motivation (Hattie & Timperley, 2007). Other than that, the teachers need to set a clear and achievable goal, including specific grammar targets, which can provide students with a sense of direction and motivation to work toward those objectives (Locke & Latham, 2002). Teachers can also initiate task variety by incorporating a variety of engaging grammar exercises and activities, such as games, multimedia, and real-world tasks, which can make grammar learning more enjoyable and motivating (Ur, 2012). In this vein, particular emphasis is placed on enhancing learners' learning experience by leveraging on technology-enabled models to enable more personalised learning in the higher-level learning classrooms as teaching digital age 21st century students require adaptive and technological induced methods by educators (Ganapathy 2015) such as, mobile-assisted instructional tools.

2.2 Keller's Instructional Design of Motivation (ARCS)

Keller's ARCS Model of Instructional Design is a theoretical framework developed by John M. Keller in the 1980s, which is designed to enhance and sustain learner motivation in educational settings. Previous research indicates that the ARCS model has significantly improved learning outcomes where numerous studies have explored the implementation of this model across diverse educational contexts (Refat et al., 2020). This model has been particularly influential in the training and design of instructional materials (Mills & Sorensen, 2004) as it serves as a template for developing and delivering a unit of instruction that motivates learning (Keller, 2016). The model focuses on four key components, each represented by an acronym within the ARCS framework:

1. Attention (A): This component involves capturing the learner's attention and interest in the learning material. To do this effectively, instructors should use techniques that stimulate curiosity, novelty, or surprise. Strategies may include intriguing questions, multimedia elements, or real-world examples (Suzuki et. al, 2004).

2. Relevance (R): Learners are more motivated when they see the direct applicability and relevance of the content to their own lives or goals. Instructors can enhance relevance by linking the learning material to the learners' personal experiences, career aspirations, or interests (Suzuki et. al, 2004).

3. Confidence (C): Learners need to feel that they have the capability to succeed in the learning task. This component involves boosting learners' self-confidence by providing clear instructions, breaking complex tasks into manageable steps, and offering constructive feedback (Suzuki et. al, 2004).

4. Satisfaction (S): Learners should experience a sense of satisfaction or accomplishment from the learning process. This can be achieved by recognizing and rewarding learners for their achievements, ensuring that they see the value of what they've learned, and fostering a sense of accomplishment (Suzuki et. al, 2004).

4.   In one study, the model was employed to design learning materials and create a motivating classroom environment in an ESL classroom in a traditional Japanese classroom setting where the learners were using mobile-assisted learning tools as part of the learning activities. The instructional design aimed to boost the confidence and reduce anxiety among the learners when communicating in English. Results confirmed the model's effectiveness in cultivating motivation among learners. Additionally, the use of mobile devices played a significant role in raising the learners' awareness of language acquisition, further fuelling motivation within the classroom setti g (Refat et al., 2020).

2.3   Gender Influence on Motivation in ESL Classroom

Recent studies continue to explore how gender affects achievement motivation in grammar instruction. Firstly, some research suggests that girls may exhibit higher intrinsic motivation and engagement in tasks that require attention to detail, such as grammar exercises (Sakiz, 2019). Girls often excel in language-related subjects due to their conscientiousness and attention to accuracy (Else-Quest et. al, 2010). On the other hand, boys may be more motivated in competitive and challenge-oriented tasks (Eccles & Wang, 2016). Incorporating elements of competition, gamification, or problem-solving in grammar instruction may enhance motivation for male learners. Research also has suggested that girls often exhibit higher levels of intrinsic motivation in language learning (Doğruöz & Yıldırım, 2020). They may be motivated by the desire to connect and communicate, emphasizing interpersonal aspects of language use. However, boys may be more intrinsically motivated when language tasks are presented as challenges or puzzles (Skehan, 2017). Incorporating problem-solving and gamification elements in ESL instruction may enhance motivation for male learners. In the aspect of task preference, some studies have found that girls tend to prefer language tasks that involve communication and interpersonal interactions, while boys may be more motivated by tasks that involve competition and performance (Dörnyei, 2005).

3.   Methodology

This study employed a descriptive quantitative research design to investigate the learner motivation based on Kellers' ARCS model of motivation in the context of grammar education, specifically the Subject-Verb Agreement (SVA) rule while using the mobile-assisted instruction tool, SVATHLON 2.0. The participants in this preliminary study consisted of 111 undergraduate students enrolled in a compulsory English language course for the semester 1 program at a public university. The selection of participants was based on convenience sampling, as the course was mandatory for the target student population. The participants encompassed a diverse demographic, representing both male and female students, which allowed for the examination of potential gender-based variations in motivation.

The goal of SVATHLON 2.0 (https://bit.ly/455wRYA) was to increase students' motivation as they study the subject-verb agreement (SVA) rule of the English language. It was simple to access via a laptop, tablet, or smartphone. The instructional design paradigm known as Attention-Relevance-Confidence-Satisfaction (ARCS) served as the model for creating the Google site. With a focus on SVA rules, SVATHLON 2.0 included notes, videos, activities, and references to aid ESL learners in honing their language abilities. There were three levels of tasks to finish, and they were integrated from several programmes like the free Hot Potatoes software, Genially quizzes, and Gamilab games. Song lyrics and close passages were developed for the first level, while a series of quizzes

were designed for the second level. The final level was an interactive game where students must compete while digitally responding to questions regarding SVA. After explaining about the SVA rule at the beginning of the instruction, the lecturer introduced SVATHLON 2.0 as a reinforcement activity. Then, a questionnaire was distributed to the students to determine their motivation level.

The questionnaire was adapted from the Instructional Material Motivational Survey (Refat et. al, 2020) that was designed following the ARCS model by Keller (2004). The questionnaire comprised a series of Likert-scale items, asking participants to rate their motivation levels after using SVATHLON 2.0 for SVA rule instruction. The 10 questionnaire items were divided into 4 sections: Attention (A), Relevance (R), Confidence (C), and Satisfaction (S). Respondents answered by choosing the Likert scale that ranged from strongly disagree (1) to strongly agree (5) for each item.

To analyse the data, quantitative analysis procedures were executed using appropriate statistical techniques. Descriptive means and independent-sample t-tests were run, to assess the levels of each component in ARCS and the mean differences between male and female respondents in their levels of motivation.

4.   Results

RQ1: What are the students' levels of motivation in the aspect of ARCS while using SVATHLON 2.0 to learn the SVA rule?

Table 1
Students' level of motivation based on ARCS

	Items	Mean	Std. Deviation
ARCS			
A	There was something interesting at the beginning of the tool that got my attention	4.117	.759
A	The variety of exercises, illustrations, in the tool, helped keep my attention	4.288	.718
R	There were videos, games and examples in the tool that showed me how subject-verb agreement could be beneficial to people.	4.315	.786
R	The content of this learning material is relevant to my interests	4.225	.794
R	I could relate subject-verb agreement to things I have seen, done, or thought about my own life	4.225	.722
C	Completing the exercises successfully was important to me	4.225	.816
C	As I worked on this lesson, I was confident that I could learn subject-verb agreement.	4.162	.757
S	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	4.279	.740
S	I really enjoyed studying subject-verb agreement using this learning tool.	4.351	.746

S	It was a pleasure to work on such a well-designed learning tool	4.414	.731

Table 1 displays the students' level of motivation based on Keller's ARCS model of motivation while experiencing a gamification approach via the use of SVATHLON 2.0 while learning SVA. Generally, students showed a high level of motivation in every aspect of ARCS. Students agreed to feel satisfaction the highest when they were satisfied after completing the exercises and had a sense of accomplishment in SVATHLON 2.0 (M=4.279, SD=.740), they enjoyed studying SVA using SVATHLON (M=4.351, SD=.746) and they felt pleased that SVATHLON 2.0 was a well-designed learning tool (M=4.414, SD=.731). Furthermore, students felt confident as they completed the exercise that was important to them (M= 4.225, SD=.816) and they gained confidence to learn SVA as they experienced the lessons in SVATHLON 2.0 (M=4.162, SD=.757).

As for the Relevance (R) component, students found relevance in the videos posted in SVATHLON 2.0 to teach SVA (M=4.315, SD=.786). Students also found the content of the learning material in the learning tool to be relevant to their interests (M=4.225, SD=.794). Lastly, students felt there was something interesting at the beginning of the site that attracted their attention (M=4.228, SD=.788) and they found the introduction of the SVATHLON 2.0 was attractive (M=4.117, SD=.759).

Conclusively, all students were discovered to be generally in high motivation to learn whilst adapting SVATHLON 2.0 in their SVA learning. Among all four components of the motivation model, the students were mostly satisfied with the learning tool, but they found the most difficult to sustain attention on SVATHLON 2.0. As satisfaction is obtained through the feeling of accomplishment when learners realise their value they have learnt (Suzuki et. al, 2004), SVATHLON 2.0 expresses the component by developing a scoring system that is embedded in every task, prepared for the students to keep track of their progress. This feature encourages intrinsic motivation every time they earn points for the correct answers and eventually ensures satisfaction is achieved by its user. Parallel to the findings, Refat et al. (2020) claim the learners' awareness is increased while activities are on-going on their mobile devices thus, boosting learner motivation. Other than that, SVATHLON 2.0 is vastly equipped with engaging activities such as listening to songs, quizzes, and virtual races to elicit interest that relate the learners to authentic situations (Ur, 2012). Based on the ARCS model (Keller, 2004), these captivating activities represent the attention (A) component because of their capability to attract and retain learner attention. However, the students failed to score as excellently as the other ARCS components; Relevance (R), Confidence (C), and Satisfaction (S) which means they were paying less attention to these features in SVATHLON 2.0. Thus, further improvements to implement more attractive elements such as engaging grammar exercises, games and multimedia widgets on the Google site should be considered to upgrade the learning tool, particularly the Attention (A) component.

RQ2: Is there any gender difference on the students' motivation in the aspect of ARCS while usingSVATHLON 2.0 to learn the SVA rule?

Table 2.
Levene's Test for Equality of Variances

ARCS		Levene's Test for Equality of Variances			
		F	Sig.	t	df
Male-Female	Equal variances assumed	.995	.321	-2.922	109
	Equal variances not assumed			-2.875	94.548

Table 2 portrays the Levene's Test for Equality of Variances between male and female students in terms of their motivation based on ARCS to ensure that the variances of different groups (male and female) in a dataset are similar. The result shows the p value was .321 (p>0.05) which means the null hypothesis was accepted. From the result of the analysis, it is deduced that equal variance in homogeneity was present between male and female student samples who participated in the present study.

Table 3.
Independent Sample T-test

ARCS		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
					Lower	Upper
GENDER MALE-FEMALE	Equal variances assumed	.004	-.34494	.11805	-.57892	-.11096
	Equal variances not assumed	.005	-.34494	.11998	-.58314	-.10674

Furthermore, to examine whether there was a difference between both genders in their motivation based on the ARCS model, an independent sample t-test was conducted via SPSS. The result in Table 3 shows significant result where p value was .004 (p<0.05). Therefore, null hypothesis was rejected. This statistically proved that there was a significant difference between male and female students in their response towards SVATHLON 2.0.

In line with the result, Dornyei (2005) mentioned the presence of gender difference in motivation. Evidently, girls prefer communicative tasks while the boys would choose competition or performance-based tasks instead (Dornyei, 2005). To add further, girls are more fascinated about the interpersonal aspects of language learning because of their innate characteristics that are drawn towards the need to establish connection with the people around them. Thus, it is important to note that this characteristic is paramount in distinguishing between the girls' and boys' learning attitude while engaging in a classroom setting (Skehan, 2017).

Table 4
The Levels of ARCS between Male and Female Students

ARCS	Gender	Mean	Std. Deviation
Attention	Male	4.0521	.67823
	Female	4.3175	.69155
Relevance	Male	4.0486	.70120
	Female	4.4127	.63278
Confidence	Male	3.9896	.77521
	Female	4.3492	.62627
Satisfaction	Male	4.1389	.70739
	Female	4.5079	.60718

Table 4 explains the differences of ARCS motivation levels between male and female students. It is proven that male students exhibited lower ARCS when compared to the female students. The male students' motivation was the lowest for Confidence (C) (M=3.989, SD=.775) and the highest for Satisfaction (S) (M=4.139, SD=.707) components. Contrastingly, the female students scored the highest for Satisfaction (S) (M=4.508, SD=.607) and the lowest for Attention (A) (M=4.318, SD=.692).

Doğruöz and Yıldırım (2020) construe similar perspective where their findings showed female students possess high satisfaction while learning languages because they appeal to the attention to the details required to learn a language, for example, to understand the miniscule components of the structure in a language. Other studies portray parallel findings which highlighted female students' inclination towards tasks engagement in grammar exercises due to their attention to accuracy (Sakiz, 2019; Else-Quest et. al, 2010). Nevertheless, the male students express higher motivation in competitive tasks such as competition, gamification, puzzles and problem-solving (Eccles & Wang, 2016; Skehan, 2017). The discrepancy in ARCS between both genders directs the teachers and researchers to consider gender as an essential factor to be reviewed when planning for a lesson, or the materials in a language classroom. Effective ESL instruction often involves a balanced approach that includes both communicative and competitive tasks, ensuring that students of all genders are motivated and engaged (Huang & Nunan, 2018).

5.   Discussion

In summary, the study reveals SVATHLON 2.0 was successful in instilling motivation among the students during a grammar learning instruction. Students were observed to generally show high motivation as they scored high points in all aspects of the ARCS model. The findings also promise a potential in SVATHLON 2.0 as one of a mobile-assisted learning tool to warrant improvement in the students' accuracy of language if their motivation is sustained throughout the instruction. However, there is room for improvement in capturing the learners' attention as they paid less attention to certain features of the learning tool.

6.   Conclusion

This study has indicated that different genders exhibit different motivation levels for distinctive ESL activities in the classroom. It is proven that female learners showed higher motivation in interpersonal language aspects while male learners were more motivated by competitive tasks. The disparity of the motivation levels between genders in the present study has brought forward an area worth studying in the context of language learning in higher education.

The major limitations were the sample and the design of the study. The researcher conducted convenience sampling instead of random sampling due to the time constraint while collecting the data. Hence, students who were assigned to the researcher by the administration of the university were selected conveniently as the respondents to the questionnaire. Other than that, as this was a preliminary study, the outcome of other variables such as the students' improvement in SVA rule knowledge after using the tool or the teachers' experience while utilizing the tool in their instruction were not considered. The differences between the students' motivation before and after using SVATHLON 2.0 was also not investigated due to the time constraint.

For future research, the ARCS instructional design model can contribute to enhancing motivation through many aspects of ESL instruction, especially grammar lessons. Researchers who are interested in studying the ARCS model can explore the impact of the model on learners' attention, relevance, confidence, and satisfaction in relation to their improvement in the grasp of the language. On the other hand, it is pertinent for future studies to also explore other variables influencing the learners while incorporating mobile assisted learning tools. Lastly, curriculum designers who are considering motivation as one of the pivotal factors to an effective syllabus could implement the ARCS model to capture students' interest to ensure a more inclusive ESL lesson.

Authors Contributions

The authors contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

Conflict of Interest

There is no conflict of interest associated with this publication.

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