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LEARNING AND INSTRUCTION

**E-LEARNING USAGE FROM A SOCIAL CONSTRUCTIVIST LEARNING
APPROACH: PERSPECTIVES OF IRAQI KURDISTAN STUDENTS IN SOCIAL
STUDIES CLASSROOMS**

SUMMARY OF THE DISSERTATION

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Background of the Research and Statement of the Problem

Social studies subjects are often crowded with abstract facts and conceptual ideas (Mahalingam et al., 2019), making it difficult for many students to memorize them. Instead of understanding and engaging with the material, students end up simply memorizing and recalling facts, concepts, and events from the social studies curriculum. As a result, social studies subjects may not capture students' interest, and they may become passive learners in the classroom (Cuenca et al., 2018). For example, Mahalingam et al. (2019) observed that some students argue that learning western history and civilization history does not contribute to their personal development and growth, as it does not necessarily align with their practical realities. Additionally, the curriculum can be overwhelming, with numerous subjects that may seem superfluous and repetitive, leaving students feeling drained due to an excessive workload and a lack of meaningful tasks (P. J. Mohammed et al., 2021).

Many scholars assert that the predominant methods of teaching social studies frequently involve passive learning activities, such as relying on textbooks and listening to instructors. Such concerns are intensively explored in scholarly research by Shaver et al. (1979), who discovered that these approaches stifle creative thinking processes and provide limited opportunities for actively engaging in problem-solving exercises. Experts from professional organizations such as AAAS, NCSS, and NCTM have acknowledged these issues and encouraged an innovative approach emphasizing new trends like interactive problem-solving activities and critical thinking programs designed to foster student interest. NCSS's vast body of rigorous research has contributed to reforms intending to promote better educational practices for schoolchildren interested in social studies at all levels (Cuenca et al., 2018; Schneider et al., 1994).

In the Iraqi Kurdistan context, passive learning is more dominant, as F. Saeed (2008), Wahab (2014), and Omer (2015) suggest that the Kurdistan Region's education system does not engage with knowledge in a critical manner. This system discourages students from interrogating their study subjects, instructing them instead to replicate and accept classroom information as truth. In the Iraqi Kurdistan Region, especially within the K-12 system, it's common to have a single government-issued textbook for each subject in any course.

Kirmanj (2014) stated that school textbooks represent the only source of knowledge on any given subject, which students are expected to master through rote memorization and exams. He added that textbooks are used in the Kurdistan Region as essential tools for disseminating specific governmental ideologies. The teaching method relies on the banking concept (Freire, 1998), offering little opportunity for critical engagement with the material or classroom environment. This is because education is largely lecture-based; students aren't encouraged to apply critical analysis or challenge the claims in the textbooks. In such environments, teachers are often seen as figures of authority similar to parents, and the information relayed through textbooks by these teachers holds nearly unquestionable authority (Kirmanj, 2014).

The intense emphasis on textbook knowledge and memorization has hindered both teachers and students from engaging in a critical examination of the curriculum and their community's social and cultural settings. Despite efforts over the last two decades to revise the content and structure of social studies textbooks, teaching methods and strategies have remained unrelated to these modifications (Saeed, 2008). Practices of indoctrination and intimidation are regularly adopted as standard teaching and disciplinary techniques. Meanwhile, certain pedagogical practices that could foster the human spirit of collaboration and democratic relationships are not only undervalued but also met with violence (Saeed, 2004).

Manfra & Bolick (2017) note that there has been little theoretical attention paid to how to apply educational technology in social studies education, even though a general consensus

exists that this needs to be done. Gallagher (2004) suggests that constructivism could be the appropriate theoretical basis for evaluating the integration of technology and social studies. A number of researchers, including White (1999), Hooper and Hokanson (2000), Lorschach and Basolo Jr. (1999), and Hicks, Doolittle, and Lee (2002), have argued in favor of using a constructivist theoretical approach to underpin the use of technology in social studies classrooms.

To support the notion of these researchers, Schoeman (2013) and Coombs (2015) discuss the theoretical correlation between the view of social studies about what is “truth” or “knowledge” and the view of social constructivism for “truth.” Schoeman (2013) confirms that social studies education was traditionally viewed from a positivist perspective, and knowledge was closely linked to the search for truth, namely, finding the knowledge that reflects or corresponds to a single reality.

However, Coombs (2015) states that social constructivists view truth as a fact or belief that can be socially adapted to various conditions. They argue it is not found in the mind of an individual but rather emerges from the collective search for truth as a result of ongoing dialogue born of interaction.

Fleury (1998) mentions that constructivism clearly underlines the importance of recognizing that the individual learner has an active role to play in constructing knowledge, of realizing that learners bring their social and personal experiences to bear on their learning, and that the knowledge they gain may not accurately mirror external reality. Ruzic (2011) asserts that embracing these assumptions transforms the nature of social studies from being a search for truth into a search for perspective.

The intersection of constructivist pedagogy and the essence of social studies underpins a vital necessity for the educational sector to evolve with technological progress. This necessity is particularly pronounced in the context of teaching children to embrace and exercise democratic principles within culturally diverse societies, such as Iraq and, more specifically, the Iraqi Kurdistan Region. The Iraqi Kurdistan Region is a tapestry of numerous ethnic and religious communities. It is home to groups such as Arabs, Kurds, Turkmen, Assyrians, and followers of Chaldean Christianity and Yezidism (Wahab, 2017). Such a rich blend of cultures underscores the critical need for an educational approach that can cater to the diverse needs of these distinct communities while promoting unity, cooperation, and mutual understanding.

In this context, researchers have identified the constructivist learning approach as a potential solution. This approach is deemed one of the most effective learning theories capable of breathing life into the currently static state of social studies science in the region. The prevailing issues in this field, namely the weakness of teaching pedagogy and the lack of development in students' higher-order thinking skills, can be effectively addressed by employing constructivist pedagogy. In essence, a shift to constructivist pedagogy within the framework of social studies could serve as a tool to drive educational advancement in the culturally diverse landscape of the Iraqi Kurdistan Region. By leveraging technological advancements and adopting this pedagogical approach, we could make a significant stride towards fostering a culture of democracy and promoting cognitive growth among students.

Differences between social studies classrooms that are taught in Arabic and those taught in English in terms of technology acceptance and social constructivist learning practices

There is considerable worry about the impact of language, especially English, on internet use and access. Despite there being almost 6,000 other languages in the world, 58.8% of websites in a poll done in (2023) by World Wide Web Technology Surveys (W3Techs) used English as their primary language. As it turns out, only ten languages make for 86.4% of all online material. About 1.5 billion people can communicate well in English, yet only 1.2 billion

of them utilize the internet, making up only 25.9% of all internet users. Therefore, without the aid of translation software, over 60% of websites may be inaccessible to the world's non-English-speaking internet users. These numbers highlight the seriousness of language hurdles on the worldwide web, which may prevent non-English speakers from fully partaking in global conversations and restricting their access to information (Richter, 2022). Therefore, it is essential in countries where English is not the first language to develop educational and internet resources that make use of local languages.

The Arab educational system also confronts similar difficulties. Many students with low English proficiency tend to avoid e-learning due to their struggle with understanding English materials, as observed by Shraim and Khalif (2010) in Palestine. This issue extends to instructors, with some faculty members at Libyan universities reported as being computer illiterate and having struggles with English, compounded by a lack of Arabic-supported e-learning applications (Kenan et al., 2013). Studies in the Arab world, including those by Al Masri and Rimawi (2022) and Alkharang and Ghinea (2013), have highlighted this issue, suggesting the need for local language resources to boost the efficacy of internet utilization and e-learning. The underrepresentation of Arabic online, coupled with the absence of comprehensive translation tools, heightens the language barrier for Arab people, impeding their full participation in global digital spaces. This study is a comparative study between schools that use English-medium instruction and schools that use Arabic-medium instruction, focusing on technology acceptance and use in the social constructivist learning environment and its impact on e-learning outcomes. Schools in the Kurdistan Region of Iraq use Arabic, Kurdish, and English as the languages of instruction. This study aims to examine the impact of language of instruction on students' attitudes towards technology, teaching practices, and learning outcomes in social studies education in the Iraqi Kurdistan region.

The structure of a dissertation

The dissertation will comprise six chapters. Chapter one will provide an overview of the study, presenting the research problem and emphasizing its importance. The second chapter provides a comprehensive review of the social, demographic, and geographic context of the Iraqi Kurdistan Region. It also delves into the current education system in Iraqi Kurdistan, reforms in social studies education, the challenges of implementing constructivist learning, and the obstacles faced in adopting e-learning technology in the region's upper primary and secondary schools.

The third chapter is dedicated to a comprehensive review of the literature. It not only gathers and organizes but also analyzes and evaluates relevant literature related to the implementation of constructivist learning methods and educational technology in general learning environments and, more specifically, in social studies classrooms. It will also discuss the educational setting in the Iraqi Kurdistan Region and outline the structure of the dissertation. The following topics are discussed: 1) e-learning technology; 2) constructivist learning approach; 3) development of the constructivist learning environment survey; 4) research framework and existing findings; 5) theoretical correlation between educational technology, pedagogical constructivism, and social studies education; 6) effect of Arabic and English medium instruction on technology acceptance and e-learning outcomes; and 7) conclusion, which includes summary of the literature and the research gap of the study. Chapter four introduces research questions and hypotheses, goals, and research instruments. It also covers research questions and outlines the research methodology, including design, sampling, instruments, data collection procedures, and software analysis that are used for data analysis in this dissertation.

Chapter five contains three empirical studies. Each study is discussed in detail, following the order of the research questions presented in Chapter 3. The first study validates

the Arabic and Kurdish versions of the Social Constructivist Learning Instrument, which includes constructs such as personal relevance, student uncertainty, critical voice, shared control, student negotiation, investigation, respect for difference, and perceived e-learning outcomes in the educational context of Iraqi Kurdistan. The second study is the main study aimed at obtaining preliminary insights into the correlation between social constructivist learning and the dimensions of the attitude toward technology. These dimensions include attitude towards technology use, perceived usefulness, ease of use, learning facility, and subjective norms. Additionally, the study includes four external constructs: students' investigation, respect for differences, students' economic ability, and perceived e-learning outcomes. The third study aims to investigate the difference in the effect of a social constructivist learning environment and the technology acceptance model on perceived e-learning outcomes between students who study social studies in Arabic and students who study social studies in English.

The sixth chapter of the dissertation contains the summaries of the three studies discussed earlier, which are presented in the final section. Furthermore, this chapter outlines suggestions, recommendations, and limitations for each study, aiming to enhance them in the future.

Research Instrument

The Social Constructivist Learning Environment

The Social Constructivist Learning Environment survey is a tool grounded in social and cognitive constructivist theories. It measures the value students place on creating engaging learning environments that foster critical thinking, investigation, and collaboration (Huang et al., 2020). There are five scales within the pioneering SCLE survey that are adopted from CLES (P. C. Taylor et al., 1994, 1997), and each scale includes between four and six sub-scales. Standard elements of the constructivist learning environment (CLE) survey, widely used within the CLES, include student negotiation, shared control, uncertainty, critical voice, and personal relevance. In this study, the researcher combined these constructs to formulate a new second-order construct named the "social constructivist learning environment." This construct was integrated into the research model and applied to the social studies classrooms in Iraqi Kurdistan schools. The possible answers a student could give within the questionnaire are almost always, often, sometimes, seldom, and almost never. These answers are known as the five-point Likert scale. In their work, Johnson and McClure (2004) outlined the factors of social constructivist learning:

1. **Personal Relevancy** refers to the growth of a student's knowledge through everyday experiences and the connection between their in-school and out-of-school experiences (Johnson & McClure, 2004).

2. **Student Uncertainty** refers to students' understanding of scientific knowledge as being derived from theoretical exploration, along with the acknowledgement of its evolving nature influenced by human values and societal norms (Johnson & McClure, 2004).

3. **Critical Voice** refers to the process of challenging and examining teaching methods and structures, identifying barriers to learning, and exploring the degree of support for such critique and innovation in an environment, in order to explore alternative knowledge development strategies (Johnson & McClure, 2004).

4. **Shared Control** refers to students participating in setting assessment criteria, learning objectives, and designing learning methods, as well as contributing to the classroom learning environment (Johnson & McClure, 2004).

5. **Student Negotiation** refers to the critical and reflective process students undertake to assess their ideas by actively listening, evaluating others' views, and providing explication and support for their evolving ideas (Johnson & McClure, 2004).

Attitude toward Technology Survey

Attitude toward technology refers to the psychological process individuals undergo while evaluating whether or not to adopt a specific technology for educational purposes. This complex process encompasses an individual's intention and attitude towards using various technologies and is influenced by numerous external and internal stimuli, including personal and social-psychological variables (Halawi & McCarthy, 2008; Mittal & Alavi, 2020). It is measured by a questionnaire that was structured and organized into several constructs, including attitude toward the use of technology (six items), perceived usefulness (six items), feeling of ease of use (five items), learning facility condition (five items), subjective norms (six items), student economic ability (six items), perceived e-learning outcome (four items), and questions concerning demographics. A five-point Likert rating scale was applied to assess these items, with 1 = a strong disagreement and, at the other end of the scale, 5 = a strong agreement. The aforementioned items were selected and adapted from (Y. Li et al., 2019). The following scales are the dimensions of attitude toward technology:

1. **Attitude toward Technology Use (ATT)** is a student's emotional response to using a specific technology, reflecting their level of positivity towards its use (Venkatesh et al., 2003).

2. **Feeling of Ease to Use (FEE)** is the belief that using a specific technology or system requires minimal physical or mental effort, thereby simplifying tasks (Davis, 1989).

3. **Perceived Usefulness (USE)** refers to an individual's belief that using a specific system or technology will enhance their work or task efficiency (Davis, 1989).

4. **Learning Facility Conditions (FAC)** refers to an individual's perception of the environmental support, including technological resources and technical and administrative assistance, that promotes technology acceptance (S. Taylor & Todd, 1995).

5. **Subjective Norms (SUB)** refer to a student's understanding of whether significant individuals in their life think they should utilize technological tools for learning (Venkatesh et al., 2003).

6. **Student Economic Ability (ECO)**: is widely accepted to greatly influence academic success at all educational levels (Ferguson et al., 2007). The Student Economic Ability Scale, adapted from the OECD's (2019) PISA survey, is crucial as it links students' economic status with their ability to use technology, a connection emphasized by Farooq et al. (2011).

7. **Respect for Difference** is a measure of students' capacity to courteously listen to and appreciate viewpoints different from theirs, based on Luckay et al.'s (2015) work.

8. **Investigation** refers to the evaluation of inquiry skills and procedures and their use in problem-solving. This scale is adopted from the "What Is Happening in This Class?" scale by Fraser (1998).

9. **Perceived E-Learning Outcome (ELEAR)** refers to students' views on how technology has improved their understanding and critical thinking. Essentially, it's the extent to which e-learning resources enhance their educational results (Sultan et al., 2011). This scale is adapted from Sultan et al. (2011).

10. **The Socio-demographic Data**: The design of the questionnaire was in the form of a paper-pencil test, which included a demographic form about students' background information related to age, grade, school type, language of instruction, experience with technology, and provision of technology in the home environment.

Methodology

Research Sample

Data collection was undertaken through quantitative research methods. The Kurdistan of Iraq Region's capital city of Erbil was the specific location studied, and the data was acquired from private, and public schools. A survey strategy was adopted to implement the cross-sectional, quantitative research design. Male and female from 8th to 12th grade students were selected for the study using a stratified random sampling method. A paper-based, self-administered questionnaire was used to collect the information.

The sample included five private and seven public upper primary and secondary schools, making 12 in total, with 1,623 students across the schools comprising the research sample. Questionnaires with missing and extreme values were eliminated, and the remaining 1,289 valid questionnaires were analyzed in terms of how constructivist learning practices and attitudes toward technology affect perceived e-learning outcomes. 667 male and 622 female students were included, accounting for 51.7% and 48.3% of the sample, respectively, thus providing a relatively equal gender representation. The majority of students (71.5%) were able to reach the laptop computer and the internet at home.

Results of Empirical Studies

The fifth chapter of the dissertation is the Empirical Research chapter, which presents the results of the primary research based partly on previously published studies (e.g., S. H. Mohammed & Kinyó, 2022; S. H. Mohammed & Laszlo, 2021).

The results of the study included 23 hypotheses. 22 hypotheses out of 23 hypotheses were supported, and the model accounted for 34.5% of the variance in perceived e-learning outcomes. Additionally, approximately 29.1% of the variance in respect for differences and 17.3% of the variance in student investigation is explained by the social constructivist learning environment.

Social Constructivist Learning Environment: This study has shown that a social constructivist learning environment (SCLE) can be considered a reliable predictor for perceived e-learning outcomes (**H1**). It was confirmed by the significant direct effect ($\beta=0.364$, $p<0.01$), thus indicating the accuracy of the social constructivist learning environment in predicting perceived e-learning outcomes. Additionally, this research finds evidence supporting that social constructivist learning environment (SCLE) has positive and significant relationships with feeling ease of use (**H2**) (FEE) ($\beta=.279$, $p<0.01$) and perceived usefulness (**H3**) (USE) ($\beta=0.100$, $p<0.01$). Furthermore, it affirms that the social constructivist learning environment is quite effective in predicting student investigation (**H4**) (INV) ($\beta=0.416$, $p<0.01$) and respect for difference (**H5**) (RES) ($\beta=0.540$, $p<0.01$). Therefore, supporting hypotheses **H1–H5**. This result suggests that when students in Iraqi Kurdistan perceive a high level of social constructivist practices in their classroom, they are more likely to have a better perception of the ease of use and usefulness of technology. This, in turn, leads to positive attitudes toward technology use. Such positive attitudes translate into a greater willingness to use technology and improve learning outcomes.

Attitude towards Technology Use: This study's result showed that attitude toward technology has a direct positive effect on perceived e-learning outcomes (**H6**) with ($\beta=0.187$, $p<0.01$), implicating that students with positive feelings toward the technology are more likely to have better learning outcomes.

Feeling Ease of Use: In this research study, a significant connection was identified between the perceived ease of use and two key factors: student attitude towards technology use (**H7**) and perceived usefulness (**H8**), as indicated by ($\beta=0.232$, $p<0.01$) and ($\beta=0.519$, $p<0.01$), respectively. If students in Iraqi Kurdistan find technology easy to use, they are more likely to view it as a useful learning tool and have positive attitudes toward it. The simplicity

of its use influences not only their attitude but also their perception of its usefulness. Therefore, if students can recognize the utility of technology, their favorable attitudes toward it will grow.

Perceived usefulness: This research study discovered that perceived usefulness is a strong predictor of attitude toward technology (**H9**) ($\beta = 0.564$, $p < 0.01$) and perceived e-learning outcomes (**H10**) ($\beta = 0.228$, $p < 0.01$). In addition, perceived usefulness may have a direct effect on perceived e-learning outcomes as well as a small indirect effect via attitude toward technology ($\beta = 0.106$, $p < 0.01$). These results suggest the significant influence that perceiving technology as useful has on both attitude and perceived outcomes in e-learning environments among Iraqi Kurdish students.

Learning facility condition: Learning facility conditions have a significant impact on the social constructivist learning environment (**H11**) ($\beta = 0.333$, $p < 0.01$). Additionally, the learning facility conditions has a significant indirect correlation with a small size effect on perceived e-learning outcomes ($\beta = 0.153$, $p < 0.01$) and on student investigation ($\beta = 0.139$, $p < 0.01$) through the social constructivist learning environment. These findings suggest that if students have sufficient infrastructure and technical support in schools in Iraqi Kurdistan, they are likely to have a more constructivist learning environment. This, in turn, can lead to better investigation and learning outcomes through the use of technology facilities in schools.

Subjective norms: Subjective norms have a significant direct effect on learning facility conditions (**H12**) ($\beta = 0.441$, $p < 0.01$). Additionally, the subjective norms have a significant indirect correlation with a small size effect on the social constructivist learning environment ($\beta = 0.147$, $p < 0.01$). As a result, Iraqi Kurdistan students had a high level of subjective norms. They would follow their teachers' or parents' guidance regarding how to use technology. This can lead to better learning performance.

Student economic ability: Student economic ability showed a significant effect on subjective influence (**H13**) ($\beta = 0.221$, $p < 0.01$) and learning facility conditions (**H14**) ($\beta = 0.183$, $p < 0.01$). The findings suggested that in Iraqi Kurdistan, students with high socio-economic status have the opportunity to access a better learning environment that is fully equipped with technology.

Technology Experience: Student technology experience showed a significant effect on feeling ease of use (**H15**) ($\beta = 0.305$, $p < 0.01$) and didn't have a direct significant effect on perceived usefulness of technology (**H16**) ($\beta = 0.029$, $p < 0.122$). The result for only the last hypotheses is not supported in this research model (**H16**).

The difference between social studies classrooms taught in Arabic and those taught in English in terms of attitude toward technology and social constructivist learning practices

Social Constructivist Learning Environment and Perceived E-Learning Environment: To address research hypothesis (**H17**), the results of the Permutation and Henseler's MGA tests showed significant differences in the effect of the social constructivist learning environment on perceived e-learning outcomes between social studies classrooms taught in Arabic and those taught in English. Specifically, the coefficient of the social constructivist learning environment and perceived e-learning outcomes relationship for the English classrooms ($\beta = 0.403$) is significantly higher than that for the Arabic classrooms ($\beta = 0.246$). The explanation for this difference may be that students within the context of English-medium instruction are tasked with acquiring content knowledge while simultaneously honing their English language skills. This process requires effective comprehension of the subject matter and the concurrent development of English proficiency (Han, 2023). Consequently, this imposes a greater cognitive and study load on students in the English group.

Attitude Towards Technology Use and Perceived E-Learning Outcomes: To address research hypothesis (**H18**), the results from the Permutation and Henseler's MGA tests

showed significant differences in the effect of attitude toward technology and perceived e-learning outcomes between the classrooms taught in Arabic and those taught in English students. Specifically, the coefficient of the attitude toward technology and perceived e-learning outcomes relationship for the Arabic classrooms ($\beta = 0.499$) is significantly higher than that for the English classrooms ($\beta = 0.275$). The difference in academic performance between upper primary and secondary school students studying in English medium instruction and their counterparts using Arabic medium instruction can be attributed to the level of language proficiency. Students receiving English-medium instruction face a high cognitive load due to the complexity of topics that require abstract thinking, which heavily depends on their knowledge of the target language (Lee, 2023; Mirizon et al., 2019; Zhang, 2018). Non-native language learners, especially those with limited language skills, experience cognitive overload when processing new content and a foreign language simultaneously (Min et al., 2019).

Perceived Usefulness of Technology and Social Constructivist Learning Environment: To address research hypothesis (H19), the results of the Permutation and Henseler's MGA tests showed no significant differences in the perceived usefulness and social constructivist learning environment relationship between Arabic and English students. Despite the fact that the coefficient of the perceived usefulness and social constructivist learning environment relationship for the English group ($\beta= 0.276$) is slightly higher than that of the Arabic group ($\beta= 0.196$). The slight differences between the English and Arabic groups could be attributed to the fact that the perceived usefulness of technology largely depends on the language barriers and capabilities, and the quality of information (Alassafi, 2022; Alsabawy et al., 2016; Ngo et al., 2016).

Perceived Usefulness and Attitude Toward Technology Use: To address research hypothesis (H20), the results of the Permutation and Henseler's MGA tests showed significant differences in the effect of perceived usefulness on attitude toward technology use relationship social studies classrooms taught in Arabic and those taught in English. The coefficient of perceived usefulness and attitude toward technology use for the Arabic classrooms ($\beta= 0.720$) is higher than that of the English classrooms ($\beta= 0.566$). The differences between Arabic and English groups may be attributed to the fact that quality English-medium education is predominantly monopolized by elite families from high socioeconomic backgrounds in society (Manan et al., 2015). Li and Qiu (2018) found that the educational background of parents and the per capita income of the family are both positively correlated with the quality of children's school attendance and their participation in tutorial classes. Accordingly, the impact of perceived usefulness on attitudes towards technology use may have been stronger for Arabic-speaking groups than for students studying in English. This could be because English learners often come from a more socio-economically advantaged background and have a stronger presence of modern technology in their family culture. For students who are studying in English, it may be more challenging to make lessons with information and communication technology (ICT) tools appealing, given their already significant exposure to technology in both the home and school environment (Z. Li & Qiu, 2018).

Feeling Ease to Use and Attitude Towards Technology Use: In addressing research hypothesis (H21), the results from the Permutation and Henseler's MGA tests revealed no significant differences in the effect of feeling ease of use on attitude toward technology use between social studies classrooms taught in Arabic and those taught in English. Despite this, the coefficient of the feeling ease of use and attitude toward technology use relationship for the English classrooms ($\beta= 0.243$) was slightly higher than for the Arabic classrooms ($\beta= 0.113$). Despite the fact that language capability has a substantial direct impact on perceived ease of use and an indirect influence on attitude towards technology use through the mediation of perceived ease of use (Ngo et al., 2016), the impact of perceived ease of use on attitudes

towards technology use is more pronounced among English-speaking groups than the Arabic group. This could be attributed to the prevalent use of English-language terminology in technology, coupled with the availability of a broader range of resources and educational materials in English (Alkharang & Ghinea, 2013; Statista, 2023).

Learning Facility Condition, Perceived Usefulness, and Feeling Ease to Use Technology: In addressing research hypotheses (H22) and (H23), the results from the Permutation and Henseler's MGA tests revealed significant differences in the influence of learning facility conditions on perceived usefulness between social studies classrooms taught in Arabic and those taught in English. The coefficient of the learning facility conditions and perceived usefulness relationship for the English classrooms ($\beta = 0.243$) was higher than that for the Arabic classrooms ($\beta = 0.113$). However, unexpectedly, the results of the Permutation and Henseler's MGA tests hypothesis (H23) showed different outcomes regarding the differences in the influence of the learning facility conditions on feeling ease of use between social studies classrooms taught in Arabic and those taught in English. The Permutation test revealed a (p-value of 0.048), indicating significant differences in the coefficient of the learning facility conditions and feeling ease of use relationship between these two groups. Conversely, the Henseler's MGA test yielded a (p-value of 0.101), suggesting no significant differences in the coefficient of the learning facility conditions and feeling ease of use relationship across these two groups. The coefficient of the learning facility conditions and the feeling ease of use relationship for the English classrooms ($\beta = 0.218$) was higher than that of the Arabic classrooms ($\beta = 0.074$), with a path coefficient difference of approximately -0.144. These differences in the path coefficient results between these two groups are due to two reasons: (1) Progress in Arabic content development, such as incorporating cultural and traditional aspects, has been slow, and the e-learning tools still heavily rely on English content (United Nations Development Programme & Regional Bureau for Arab States, 2009). (2) Commonly, students studying in English-medium instruction schools are from a better socio-economic status (Manan et al., 2015). This suggests that parents with higher socio-economic status tend to provide their children with more resources, including technological facilities, extracurricular activities, and educational outings (Merritt & Buboltz, 2015). As a result, the English student group tends to have greater exposure to educational technology and demonstrate superior ICT literacy skills (Scherer & Siddiq, 2019), as the availability of facilities has a direct effect on computer self-efficacy (Lai, 2013).

CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS

The existing literature lacks a comprehensive model to examine the crucial factor that influences the adoption and acceptance of e-learning by students from Iraqi Kurdistan. The dearth of empirical research on the uptake of e-learning could lead to limited knowledge and comprehension of the use of these educational technologies. Therefore, this study and its findings have added to the knowledge and literature on the adoption of e-learning. This was done by examining existing literature on e-learning technology conducted in both developed and developing nations, identifying significant factors that affect the adoption of such technologies. These factors were then adapted to the context of e-learning adoption in general within developing countries and specifically within the Iraqi Kurdistan Region.

The research objectives of this paper were to investigate how social constructivist learning practices affect adopting e-learning technologies and learning outcomes in upper primary and secondary schools in Iraqi Kurdistan. The research conducted in the Iraqi Kurdistan Region was the first of its kind to examine the technology acceptance model (TAM) and social constructivist learning environment (SCLE). This study adds to the increasing number of cross-cultural studies that validate the applicability of the social constructivist learning environment and the technology acceptance model beyond the Western world. There

were two main outcomes of the study. Firstly, it was discovered that the TAM and SCLE models were valid in the context of Iraqi Kurdistan. This was determined through testing both the Arabic and Kurdish language versions. Additionally, some external factors relevant to Iraqi Kurdistan were identified. Secondly, the study broadened the original TAM and SCLE models by introducing external variables such as investigation, respect for difference, student economic ability, and subjective norms. This was done to account for aspects of a non-Western culture. This paper puts forward a conceptual framework based on the literature on constructivist learning environments and technology acceptance models. This study investigated the perceived e-learning outcomes of students through the use of e-learning technologies and social constructivist learning. According to the researchers (Dalvi-Esfahani et al., 2020), there have been only a small number of studies that have examined the use of e-learning technology and its influence on learners' perceived learning outcomes.

In the context of the Iraqi Kurdistan Region, schools should prioritize training for teachers, especially those in an English-medium instruction environment. Integrating constructivist learning practices can enhance students' comprehension and language acquisition while reducing cognitive load. Given the positive disposition of upper primary and secondary students towards e-learning, it's imperative for schools to integrate more technology tools and services into their curriculum, promoting collaborative and constructivist learning. Schools should also ensure that robust technological infrastructure, including high-speed wireless internet, is in place to support the shift towards e-learning. Additionally, the establishment of specialized e-learning centers or labs will provide a platform for students and educators to familiarize themselves with modern educational technologies, paving the way for a seamless transition towards technology-driven pedagogies.

The results of this study indicate that upper primary and secondary students have a positive attitude towards the use of e-learning. Therefore, it is important to create e-learning materials that are tailored to the local culture to increase the likelihood of successful adoption, especially by providing more e-learning materials in local languages. Designers of e-learning should focus on enhancing the perceived effectiveness of the technology while ensuring that the content is reliable and the services provided are of high quality.

For e-learning to be effective in the Iraqi Kurdistan Region, content must be tailored to reflect local traditions, culture, and religious beliefs, particularly in social studies education. It's essential to develop learning materials in both Arabic and Kurdish, ensuring they align with the region's cultural nuances. Given the vast amount of western-centric content available, there's an urgent need to produce culturally adapted materials. This will enhance the learning experience and ensure alignment with students' linguistic and cultural backgrounds and the religious beliefs of the Iraqi Kurdistan Region's society.

Limitations and Future Research

Like all research endeavors, this study is not exempt from certain limitations, which have resulted in more questions than resolutions. These limitations are classified into three broad categories. Firstly, our methodology, which heavily relied on self-reported questionnaires, was based on the subjective evaluation of students and therefore may have been influenced by response bias. This limitation opens up room for future studies to gain a more comprehensive understanding of the reasons students accept or reject new technologies in a constructivist learning environment. A potential solution could be the adoption of a mixed-methods approach, incorporating both questionnaires and focus group interviews for a more holistic understanding of the subject matter.

Secondly, an area of improvement for future research is the expansion of the technology acceptance model (TAM). This could include additional constructs such as social influence, learning motivation, proficiency in international languages, language capability, information quality, knowledge quality, technology fit, self-directed learning, computer self-efficacy, study

load, cognitive load, students' socio-economic status, parental educational level, and students' academic outcomes (GPA). By integrating these additional scales, future studies could provide more empirical answers to the questions that arose from our study. More importantly, it would enhance our understanding of the interplay between classroom environments in Iraqi Kurdistan and the corresponding learner outcomes. Lastly, the geographic scope of our study was a constraint, as the research was conducted exclusively within urban regions. We suggest that future studies widen the research parameters to include rural and semi-urban areas. Such an expansion would not only allow for a broader data set but also offer richer, more varied insights into the implementation and acceptance of new technologies in different educational settings.

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