

Does Habits of Mind-Based Instruction Catalyze Literacy Development? The Case of Jordanian EFL Learners

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This study examines the potential effect of habits of mind-based instruction on Jordanian EFL tenth-grade students' literacy development. A quasi-experimental design was used, as two intact sections (n=35) were drawn from a pool of five tenth-grade sections from Hay Al-Arqoub Basic Mixed School, a public school in the North-West Badia Department of Education, Mafraq (Jordan). The two sections were randomly distributed into a control group (n=18) and an experimental group (n=17). A pre-/post- test was used to assess the participants' performance before and after the implementation of an eight-week habits of mind-based instructional program. Descriptive statistics of both central tendency and dispersion (e.g., means, Standard deviations, variance) were used to analyze the data. The findings revealed that the participants of the experimental group outperformed those in the control group in both reading and writing. The findings stress the importance of a conducive, non-threatening learning environment in which learners feel 'safe' to ask questions, engage in literacy-related activities, and interact with peers to achieve common goals. With practice, habits of mind become behaviors for students and teachers to build on, value, and use to handle situations in and outside the classroom.

Keywords: EFL, habits of mind, instruction, Jordan, literacy development

INTRODUCTION AND BACKGROUND

Although literacy generally denotes the ability to read and write, no consensus has been reached as to its exact definition. UNESCO considers a person literate if he/she can both read and write a simple statement about his/her everyday life (UNESCO, 2008). Similarly, the Program for International Student Assessment (PISA) defines reading literacy as an (inter)active process in which one understands, uses, and reflects on written texts for the purpose of achieving goals, developing knowledge and potential, and participating in society (Organization for Economic Co-operation and Development (OECD), 2006). According to the Australian Curriculum, Assessment and Reporting Authority (ACARA, 2013, p.1), a student becomes literate as he/she “develop[s] the knowledge, skills and dispositions to interpret and use language confidently for learning and communicating in and out of school and for participating effectively in society”.

Despite the dispute over the definition, there seems to be an agreement that how we define literacy essentially shapes not only how individuals who are literate or illiterate are perceived but also how

educational programs are designed and delivered (e.g., Scribner, 1984). In other words, how literacy is defined seems to affect classroom instruction and the literacy-related opportunities offered to students, since the development of literacy necessitates not only reading and writing (Johnston, 2003) but also skills like listening, viewing, speaking, creating oral, print, visual, and digital texts, and using and modifying language for different purposes in a range of contexts (ACARA, 2013).

Literacy is much more than the ability to read and write (Hart & Risley 1995), as children go through varied experiences with oral and written language depending on the resources and support available to them (McGill-Franzen et al., 2002). Some children may have better access to reading and writing materials; some may have better family involvement in literacy-related activities; and some may receive more formal instruction than others.

The ability to read and write does not develop naturally (Lieberman, 1992; Lyon, 1998) but is rather shaped by the child's immediate experiences and active interactions with the language around him/her. With adult guidance and instruction, the child starts to experiment with language and learns to process letters, translate them into sounds, and relate new with existing information to form patterns, which eventually materializes into automaticity and fluency in reading and writing (Anbar, 1986).

Despite theories which suggest that reading precedes writing in the same manner listening precedes speaking (Cunningham & Stanovich, 1997; Shanahan, 2006), children do not learn to read through exposure to text the way infants learn to speak through exposure to the sounds around them. However, many teachers and other language practitioners deem explicit instruction in phoneme awareness, phonics, and reading comprehension unnecessary because they seem to believe that the reader can readily use his/her oral language skills to decode and recognize unfamiliar words (Edelsky et al., 1991; Goodman, 1996).

Nevertheless, evidence abounds on the interdependence between reading and writing. Children acquire a working knowledge of the alphabetic system not only through reading but also through writing (e.g., Read, 1971). Reading potentially catalyzes writing ability (Cunningham & Stanovich, 1997; Kim et al., 2011; Kim et al., 2014; Krashen, 2004). Word recognition may affect spelling and, hence, the ability to write fluently whereas spelling itself may influence word recognition (Berninger et al., 2002).

In a foreign language context, such as that of Jordan, it is in the classroom that children are afforded opportunities to read and write with purpose (Graves, 1983; Sulzby, 1982; Dyson, 1988). Teachers are expected to create these opportunities to engage the learners in literacy-related activities through the provision of learning environments which not only are rich with literacy-related artifacts (Morrow et al., 1998) but also catalyze the learner's meaningful experiences with reading and writing.

Jordan adopts an English as a foreign language approach, which entails that English is taught as a compulsory school subject to K-12-grade students in all public and private schools in the country. The English language curriculum, which is designed to enable students to achieve communicative proficiency as they advance through the grades, covers all aspects of language learning, with special focus on grammar, vocabulary, and comprehension skills. Furthermore, Teaching English, per prescribed teacher books which accompany all Ministry-endorsed textbooks, often involves a mix of traditional teaching methods and modern approaches aligned with the national curriculum.

English is also considered a requisite for higher education, which makes it even more important. It figures in the General Secondary Education Certificate (Tawjihi), a crucial secondary school-exit examination which affects admission into Jordanian universities (whose programs also require a certain level of English proficiency).

Several curricular reforms have been put in place to develop students' proficiency to allow them better access to international resources, information, and opportunities. However, students' English language proficiency, as assessed through periodic tests, has been reported to be under satisfactory levels (e.g., Al-Hamad et al., 2019; Bataineh & Al-Sakal, 2021; Bataineh & Mayyas, 2017), which has prompted Jordanian scholars to look for alternative and/or supplementary approaches to alleviate the challenges faced by these students (e.g., Bataineh & Al-Refa'i 2019; Bataineh & Alqatanani 2017; Bataineh & Al-Shabatat, 2019; Bataineh et al., 2020). Incorporating habits of mind into language instruction is attempted in this research.

Habits of mind, also called *soft skills* or *noncognitive skills* (Kallick & Zmuda, 2017) were developed by Costa and Kallick (2008; 2009). They comprise problem-solving strategies (Mason, 2019) crucial for

both life and education. Resnick (1999) claims that “[o]ne’s intelligence is the sum of one’s habits of mind” which engage learners in literacy-related activities through a set of 16 habits. Embracing these habits of mind potentially provides learners with skills (e.g., strategic reasoning, insightfulness, perseverance, creativity), which are crucial for both the classroom and real life beyond.

These habits are *persisting, managing one’s impulsivity, listening with understanding and empathy* to become better learners and thinkers, *thinking flexibly* about learning and literacy to help students grow, *metacognition* (thinking about thinking), *striving for accuracy, thinking and communicating with precision* to encourage self-expression orally and in writing, *questioning and posing problems, applying past knowledge* to learn from mistakes and improve language use, *collecting sensory data* to foster engagement and learning, *creating, imagining, and innovating* through writing and other creative activities, *responding with wonderment and awe* through language and literacy, *taking responsible risks* through reading challenging texts or rethinking written assignments to hone both mind and skills and foster language and literacy, *finding humor* in slips of the tongue or pen, *thinking interdependently* through interacting with both teacher and fellow-students, and *continuous language learning* through face-to-face and/or online schooling, reading, watching videos and other media (Costa & Kallick, 2008).

The underlying model for habits of mind-based instruction is that of *personalized learning* in which each learner adopts a growth mindset (Burnette et al., 2013; Hart, 2018; Myers et al., 2016) and actively addresses problems which not only inspire *co-creation* in the inquiry, analysis, and final product but also provides opportunities for *voice, social construction, and self-discovery*. The teacher’s investment in developing a growth mindset (Myers et al., 2016) through promoting specific habits of mind (Costa & Kallick, 2008) is potentially a formula for success in the foreign language classroom, as he/she facilitates learning through questions, conferences, and feedback for the learners to achieve mastery in skill and performance (Kallick & Zmuda, 2017; Lan & Lin, 2011; Pressley, 2002).

PROBLEM, PURPOSE, AND QUESTION OF THE STUDY

Reviewing the related literature has shown little empirical research on the use of habits of mind in the EFL classroom, which signals a dearth of research that gravely need addressing and a gap this research is hoped to bridge, albeit partially. Thus, these researchers embarked on an investigation of the potential effect of habits of mind-based instruction on Jordanian EFL students’ literacy development.

The researchers, both experienced educational practitioners, have observed their students struggle with reading and writing in the EFL classroom. A thorough review of the literature suggests that there is a dearth of empirical data on the literacy development of Jordanian EFL learners despite reports that literacy development is crucial for educational attainment (Mulcahy et al., 2016), academic success (Hemphill & Tivnan, 2008; Yesil-Dagli, 2011), and quality of life.

Jordanian EFL students have been observed to be passive recipients of knowledge, mostly from the teacher and a prescribed series of textbooks, *Action Pack 1-12*. Hence, assessment mainly focuses on measuring and reporting on academic knowledge, more often than not in the recall and comprehension levels of Bloom’s taxonomy. Various reforms have targeted learners as the center of the learning process, and many initiatives were put in place for the purpose of learner engagement and ownership.

However, often times, learners are denied the opportunity to engage in higher-order thinking and demonstrate skills which are crucial for meaningful learning, simply because teaching and learning are merely done to the test. In teaching to the test, teachers focus instruction either on the test items themselves or on similar items (Popham, 2001) to ensure that students get high scores which do not necessarily reflect the actual knowledge and skills associated with a particular instructional content. In other words, these test scores are often much higher than students’ actual learning (Koretz, 2008). As a result, students get higher test scores but less learning (Koretz, 1996), as they are denied opportunities to think, verbalize, and develop the necessary soft skills or habits of mind they need to foster their resourcefulness and problem-solving abilities in and outside the language classroom.

The purpose of this research is to determine if habits of mind-based instruction affects Jordanian EFL tenth-grade students’ literacy development. More specifically, the study seeks to answer the question, *are*

there any statistically significant differences in students' literacy development that can be attributed to instruction (habits of mind vs. conventional)?

SIGNIFICANCE OF THE STUDY

This study derives its significance from being one of the first to examine literacy development in the Jordanian EFL context and the potential effect of habits of mind-based instruction on the literacy development of Jordanian EFL learners. The current research seeks not only to fill a gap in the existing literature on literacy development but also to offer a potentially viable alternative to prescribed teacher book-driven instruction.

DESIGN, PARTICIPANTS, INSTRUCTIONAL TREATMENT, AND INSTRUMENT OF THE STUDY

A two-group, quasi-experimental design was used in the study. The independent variable of the research is the instructional modality (habits of mind vs. conventional) and the participants' literacy development is the dependent variable.

A purposeful sample of 35 students in two intact tenth-grade sections was drawn from Hay Al-Arqoub Basic Mixed School, a public school run by the North-West Department of Education, Mafraq (Jordan) in the second semester of the academic year 2021/2022. These two sections were randomly divided into one control (n=18) and one experimental group (n=17) by tossing a coin. *Action Pack 10* is the textbook prescribed by the Ministry of Education (MoE) to all tenth-grade students in the public and private schools throughout Jordan. All literacy-related content in *Action Pack 10* was taught to all 35 students, using a habits of mind-based treatment with the experimental group and the guidelines of the prescribed teacher's book with the control group.

A 25-item literacy pre-/post-test was designed per a table of specifications based on the relevant content of *Action Pack 10* and the *General Guidelines and General and Specific Outcomes for the Tenth Grade* (MoE, 2013). The test, whose reliability and validity were established by means of a pilot study on 17 students ($r = 0.96, 0.90$), excluded from the main sample of the research, and a 10-expert jury, respectively, was divided into two sets of 13 and 12 multiple-choice questions which assessed reading and writing, respectively.

While the control group was taught per the guidelines of the teacher's book, an instructional treatment, whose validity was also established by a 10-expert jury, was designed specifically for the experimental group making use of habits of mind. An amalgamation of skills, attitudes, cues, past experiences, and proclivities is a requisite for the use of habits of mind to respond to the challenges involved in developing reading and writing.

FINDINGS OF THE STUDY

To answer the research question, the control and experimental groups' means and standard deviations of the pre- and post-test scores in reading, writing, and overall literacy were calculated, as shown in Table 1.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF THE PARTICIPANTS' PRE- AND POST-TEST
SCORES PER SKILL AND GROUP

Skill	Group	Maximum Score	Pre-test		Post-test	
			Mean	SD	Mean	SD
Reading	Control	15	5.71	1.21	7.53	2.12
	Experimental		5.67	1.33	10.72	1.87
Writing	Control	10	4.06	1.34	6.65	1.11
	Experimental		3.94	1.39	8.11	0.83
Overall	Control	25	9.76	2.08	14.18	3.11
	Experimental		9.61	1.94	18.83	1.79

Table 1 shows that the mean scores of the experimental group in reading, writing, and overall literacy are higher than those of the control group. To assess the effect of habits of mind-based instruction on the linear combination of the two literacy skills, a one-way multivariate analysis of covariance (One-way MANCOVA) with a multivariate test (Hotelling's Trace test) was conducted, as shown in Table 2.

TABLE 2
LINEAR COMBINATION OF THE TWO LITERACY SKILLS PER
INSTRUCTIONAL MODALITY

Effect	Value	f	Hypothesis df	Error df	Sig.	η^2
Instruction	1.36	20.38	2.00	30.00	0.00	0.58

Table 2 shows a significantly sizable main effect for instructional modality ($\eta^2 = 0.58$, Hotelling's Trace=1.36, $f(2, 30) = 20.38$, $p.001$), which suggests a difference in the linear composite of the two literacy skills (viz., reading and writing) between the experimental and control groups. The partial eta squared value of 0.58 indicates that 58 percent of the variance in the composite of the two literacy skills may have been caused by the instructional modality. In other words, the instructional modality has a statistically significant effect on the linear combination of the two literacy skills, which necessitates conducting a follow-up univariate between-subject analysis of variance, as shown in Table 3.

TABLE 3
BETWEEN-SUBJECT EFFECTS OF THE INSTRUCTIONAL MODALITY ON THE TWO
LITERACY SKILLS (AFTER CONTROLLING THE EFFECT OF PRE-TEST SCORES)

Source	Skill	SS	df	MS	f	Sig.	η^2
Pre-reading (covariate)	Reading	10.18	1	10.18	2.74	0.11	0.08
	Writing	0.03	1	0.03	0.04	0.84	0.00
Pre-writing (covariate)	Reading	4.16	1	4.16	1.12	0.30	0.04
	Writing	10.06	1	10.06	14.74	0.00	0.32
Instructional modality	Reading	91.61	1	91.61	24.68	0.00	0.44
	Writing	19.94	1	19.94	29.22	0.00	0.49
Error	Reading	115.08	31	3.71			
	Writing	21.15	31	0.68			

Corrected Total	Reading	220.97	34
	Writing	50.40	34

Table 3 shows that the performance of the participants of the experimental group was significantly better than that of the participants of the control group in both literacy skills. Table 3 also shows that the instructional modality explained 44 percent and 49 percent of the variance in reading and writing, respectively, considering the partial eta squared values of 0.44 and 0.49. Additionally, the unadjusted and adjusted means of the two literacy skills for the experimental and control groups were calculated (before and after controlling for the pre-test scores), as shown in Table 4.

TABLE 4
UNADJUSTED AND ADJUSTED GROUP MEANS AND VARIABILITY OF THE TWO LITERACY SKILLS (WITH PRE-TEST SCORES AS A COVARIATE)

Skill	Group	Unadjusted Mean		Adjusted Mean	
		Mean	SE	Mean	SD
Reading	Control	7.53	2.12	7.51	0.47
	Experimental	10.72	1.87	10.75	0.45
Writing	Control	6.65	1.11	6.62	0.20
	Experimental	8.11	0.83	8.13	0.20

Table 4 shows persistent statistically significant differences between the reading and writing performance of the experimental and control group participants even after accounting for the variations in pre-test scores, which readily suggests that the experimental group's reading and writing were positively affected by the habits of mind-based instruction.

To determine the potential statistical significance of the effect of the instructional modality (habits of mind vs. conventional) on overall literacy (after adjusting for the effect of the pre-test scores), a one-way Analysis of Covariance (ANCOVA) was performed, as shown in Table 5.

TABLE 5
ANCOVA OF THE EFFECT OF THE INSTRUCTIONAL MODALITY ON OVERALL LITERACY

Source	Type III SS	df	MS	f	Sig.	η^2
Pre-test	43.94	1	43.94	8.52	0.01	0.21
Instructional Modality	196.54	1	196.54	38.11	0.00	0.54
Error	165.04	32	5.16			
Total	10010.00	35				
Corrected Total	398.57	34				

Table 5 shows a significant difference between the overall literacy mean scores of the participants of the experimental and control groups. The partial eta squared value of 0.54 suggests that the instructional modality accounted for 54 percent of the variance in the two groups' overall literacy, which further suggests that habits of mind-based instruction improved the participants' overall literacy.

Unadjusted and adjusted means were further used to determine the overall literacy levels of the participants in the experimental and control groups, as shown in Table 6 below.

TABLE 6
UNADJUSTED AND ADJUSTED GROUP MEANS AND VARIABILITY OF THE PARTICIPANTS' OVERALL LITERACY (PRE-TEST SCORES AS COVARIATE) PER INSTRUCTIONAL MODALITY

Group	Unadjusted Mean		Adjusted Mean	
	Mean	S E	Mean	SD
Control	14.18	3.11	14.13	14.13
Experimental	18.83	1.79	18.88	18.88

Table 6 shows persistent statistically significant differences in overall literacy between the experimental and control group participants even after accounting for the variations in pre-test scores, which readily suggests that the experimental group's overall literacy was positively affected by habits of mind-based instruction.

DISCUSSION OF THE FINDINGS

The findings revealed that the instructional modality has a significant effect on the participants' reading, writing, and overall literacy development. The participants of the experimental group, taught through habits of mind-based instruction, outperformed those in the control group, taught per the guidelines of the prescribed teacher's book, in both individual skills and overall literacy.

Several factors may have contributed to the superiority of the performance of the experimental group. The meticulous design of the habits of mind-based activities allowed the participants many opportunities to engage in extensive reading and writing practice over the eight weeks of treatment. The careful implementation of the treatment may have also led to the substantial development in the participants' literacy, as every lesson plan outlined not only the intended learning outcomes but also the exact procedures to be followed by both the teacher and students in carrying out the activities of each lesson.

The fact that the treatment was specifically designed to the participants' needs and levels of proficiency levels may also have been responsible for the relative gain in the experimental group's literacy development. The difficulty of the tasks (*finish the assignment; read and answer; listen and read; read again; express opinion or fact*) was carefully regulated to encourage the participants to engage and persevere in their practice of reading and writing. For example, using a variety of activities (e.g., eliciting student views, analyzing texts for cause and effect, making judgments based on relating the text to prior knowledge) seems to have catalyzed the experimental group participants' literacy development. Habits of mind-based instruction seems to have enabled the participants to consider alternative viewpoints on certain topics, which, coupled with the novelty of this type of instruction, seems to have encouraged the participants to engage and contribute.

This is in line with the findings of the National Council for Curriculum and Assessment (NCCA, 2009) which reported that habits of mind provide learners with challenging exercises which encourage them to continue reading, writing, and learning. For example, asking learners to *write about a particular topic, recount a scenario from a different viewpoint, or analyze a persuasive piece of writings to answer questions* are all opportunities for growth as readers and writers.

The cooperative nature of habits of mind-based instruction, which has enabled the participants to interact with both literacy artifacts and other participants, may have added to the utility of the treatment, as the participants engaged in literacy-related activities through *persisting, managing impulsivity, and using all senses to gather information*. Coupled with the participants' heightened motivation, which was obvious during classes, the ensuing conducive learning environment increased ownership and responsibility for learning.

CONCLUSION, PEDAGOGICAL IMPLICATIONS, AND RECOMMENDATIONS

Literacy instruction involves not only the use of materials and experiences to encourage reading and writing but also the teacher's diligent presentation of concepts, skills, and strategies in a conducive environment which allows learners opportunities to apply them. As their literacy-related abilities develop, learners become more independent readers and writers. This potentially changes the teacher's role from helping them *learn to read and write* to helping them *read and write to learn*, as only then would they begin to appreciate reading and writing as meaningful real-life activities in which they get to think creatively, analyze topics, ask questions, and organize responses from different points of view (Brookfield, 1987; Perry, 1999).

With practice, habits of mind become behaviors for students and teachers to build on, value, and use to handle situations in and outside the classroom. Students potentially transfer the skills they gain from observation, interaction, and peer learning in the classroom (Heyman, 2008; Slavin, 1995; Van Boxtel et al., 2000) into situations outside the classroom so much so that, in time, they stop having to remind themselves about which *habit of mind* to use, as they develop routines for autonomous learning.

The findings have stressed once more the importance of a conducive, non-threatening learning environment in which learners feel 'safe' to venture into asking questions, engaging in literacy-related activities, and interaction with peers to achieve common goals. However, this may not be enough without carefully designed, differentiated instruction and practice for students across all levels of proficiency.

The provision of appropriate activities potentially fosters learners' inquiry and thirst for learning. Teachers use age- and proficiency level-appropriate habits of mind to achieve goals and avoid overwhelming learners with habits of mind that may not be appropriate for them. Sequencing may be necessary here, as teachers need use frequently used and inter-related habits of mind before less frequent or more complex ones.

In light of the findings, it is recommended that teachers make use of habits of mind-based instruction. This can only be made possible through its integration into teacher pre- and in-service education programs, which would equip teachers not only with information about its merit and utility but also with the expertise to effectively implement it in the language classroom. As this quasi-experimental research has established the potential utility of habits of mind-based instruction in foreign language education in general and literacy development in particular, it is further recommended that research with a longer duration and more diverse target groups be conducted for deeper insights and more readily generalizable findings.

ETHICS STATEMENT

Ethical approval for this study was obtained from the Scientific Ethics Committee at Yarmouk University. The consent of all participants was obtained prior to their participation in this study.

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