



Emerging Gender Differences in Undergraduate Student Perceptions of Andragogical Learning in Higher Education in the United Arab Emirates and Instructional Strategies to Support Male Students

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Abstract. Adult learners learn differently from children, and they bring many experiences to the adult learning classroom. Understanding students' attitudes towards andragogical learning can help educators plan and execute meaningful learning at the tertiary level. Andragogy explains how and why adults learn, and it was chosen as the theoretical foundation for this chapter. Knowles (1987) identified the key assumptions of andragogy: the importance of self-directed learning, the role of experience, readiness to learn, orientation to real-life situations, and motivation. A recent survey indicated significant gender differences in two of these assumptions in a hybrid learning environment: motivation and self-directedness. These gender differences have implications for instructional design and strategies. This paper will address the gender differences in the andragogical tenet of self-directedness. The results indicated that male students are significantly less self-directed than female students. Research suggests that self-directedness can be developed by supporting students to set goals, have a say in assessing progress, define the structure and sequence of activities, choose a timeline, and seek feedback. As a result, to ensure successful self-directed male students, instructors must know how to scaffold learning to develop these skills needed for male students to be successful. The theory and applications of andragogy, specifically self-directedness, can provide instructors with valuable tools for their instructional practice, which can be used to address the needs of male adult learners in the United Arab Emirates for academic and lifelong learning success.

Keywords: Andragogy, Self-directed Learning, Gender Differences, Flipped Classroom, Hybrid Learning.

1 Introduction

Knowles (1987) is recognized for popularizing andragogy, which distinguishes adult learners as self-directed individuals motivated by their interests and experiences (Henschke, 2009). Knowles identified the key assumptions of andragogy: the significance of self-directed learning, the role of experience, readiness to learn, orientation to real-life situations, and motivation. The comparison between pedagogy (methods of teaching children) and andragogy (methods of teaching adults) highlights differences in learner autonomy, experience, timing, and purpose.

Challenges in education in the United Arab Emirates include lower enrollment rates of male Emiratis in college or university, high dropout rates among male Emirati students, lack of parental support and involvement, linguistic complexities, and concerns about the quality of graduates (Daleure, 2011a; Ahmed 2011; Daleure, 2013).

Learner-centeredness is vital in adult education, but the context of the United Arab Emirates presents challenges due to students' lack of intrinsic motivation. Engin and McKeown (2016) noted that the highest motivator for Emirati students is fulfilling societal and family expectations. Incorporating learning theory into educational practices is crucial for successful andragogy, but there are inconsistencies in implementing student-centered learning approaches in different contexts (Jackson, 2015). Preferences for teaching methods among students in the United Arab Emirates vary, with a partiality for traditional lecture-based approaches over self-directed learning or problem-based learning (Basksh et al., 2014). Therefore, this chapter is guided by the following research question: Is there a gender difference between male and female perspectives of andragogy in hybrid learning in the United Arab Emirates?

Data was retrieved from an adapted questionnaire from The Adult Learning Principles Design Process Elements Questionnaire (ALPDEQ) (Wilson, 2005) and included 29 questions. The first part of the questionnaire collected demographic information, such as age, gender, the number of courses completed with the flipped classroom approach, and students' motivations to study. The second part was a five-point Likert scale that measured students' perceptions of andragogical learning principles. By examining age, gender, work experience differences, and perceptions of andragogical principles in the flipped classroom, this study seeks to contribute to theory development and inform educational practice in the United Arab Emirates higher education setting, specifically in support of male students.

2 The Key Tenets of Andragogy

Knowles (1980) noted that any knowledge learned will become obsolete – it is only a matter of time. Therefore, education should be defined as a lifelong process where the most important aspect of learning for children and adults alike "is learning how to learn, the skills of self-directed inquiry" (p. 41).

Muduli et al. (2018) put forth a summation of Knowles' ideation. He posits that when pedagogy is compared with andragogy, the following assumptions are made:

- Children are generally viewed as dependent learners, and adults are mature individuals who are self-directed in their learning. Adults want to be in charge of their learning.
- As inexperienced individuals, children do not bring much to the learning process. However, adults have experience that counts as a resource in the learning process.
- Children learn at school, whereas adults choose to learn when they feel the need to do so.
- Learning for younger learners is an accumulation of information that might be used later in life. In contrast, adults view learning as a means to improve their knowledge and apply new knowledge to their daily lives (p. 171).

Knowles et al. (2020) go further and identify six assumptions of andragogy:

- The need to know: Adult learners need to know why they have to/want to learn something. This means that the first task of the adult educator is to help learners become aware of the need to know.
- The learner's self-concept: Adults are capable of self-direction, and making your own decisions is part of the self-concept of the adult. This implies that adult educators try to help learners move from teacher-centered learning to self-directed learning.
- The role of learner's experience: Adults bring rich experiences to an educational activity. Therefore, techniques that tap into learners' experience, such as discussions, problem-solving activities, and case studies, are preferable to transmittal techniques.
- Readiness to Learn: Adults, as opposed to children, are prepared to learn the factors they need to deal with real-life situations.
- Orientation to learning: Adult learning is life-centered in its orientation to learning. Thus, one can conclude that when adults are presented with situations where they have to apply knowledge to real-world scenarios, they will learn better.
- Motivation: Lastly, the most potent motivators of adult learning are intrinsic, e.g., increased job satisfaction. However, external motivation, such as promotions or higher salaries, should not be ignored (Knowles et al., 2020, p. 43-47).

This chapter focuses on male students' self-directedness in the context of the United Arab Emirates.

2.1 Gender Differences in the Perceptions of Andragogy in the Middle East

There is a paucity of research in the literature reviewed dealing specifically with the perception and take-up of andragogy in the Middle East (Kirk, 2010). Tennant and Dickson (2019) report on new opportunities for Emirati women to go beyond their traditional role of mothers and educational reforms in the UAE have allowed women to pursue higher education. Tennant and Dickson (2019) state, "In short, Emirati women, who account for 49.3% of the national population, are at the forefront of UAE's educational, social, economic, and political spheres" (p. 77).

Aljohani and Alajlan (2020) investigated the motivations for adult learning in adult education schools in western Saudi Arabia. These researchers indicate a significant difference, based on gender, in the motivation of adult learners. Aljohani and Alajlan

found that female adult learners are more motivated by family togetherness, social stimulation, and cognitive interest than male adult learners. The researchers explained that the unemployment number of females is much higher than that of males in Saudi Arabia. Aljohani and Alajlan, therefore, claim that "women may be more motivated for cognitive interest in order to continue their learning" (p. 46). In a later study, Aljohani and Alajlan (2021) reported that male students' need to know (one of the andragogical principles) was much lower than female students.

Chong (2018) also found that male students at a private university in the UAE showed lower motivation toward self-directed learning than female students, but there was no significant difference between male and female students' commitment to the university.

Daleure et al. (2013) indicated that girls outperform boys at school levels, and the majority of university graduates are female. Similarly, Abdulla and Ridge (2011) observed that women in the UAE had access to education almost two decades later than their male counterparts. However, today, they claim that Emirati women surpass men in tertiary education enrollment and performance.

Tamim (2018) reported on Emirati female students' high motivation levels in blended learning. Tamim cited that support from other female family members is essential for student motivation in the UAE. This finding raises the question of whether male students receive equitable support compared to their female counterparts.

Other researchers didn't report any differences according to gender. For example, Alfaifi (2016) found no difference in adult Saudi Arabian students' readiness for self-directed learning but noted that Saudi students were not trained to become self-directed learners in the past.

3 Methodology

The present study is a quantitative research study using a questionnaire to collect data. Analysis of the data was done using both descriptive and inferential statistics. The sample of participants was 183 out of all those invited to respond to the questionnaire, 112 of which were females and 71 were males. The Research and Ethics Review Committee (REIC) at the study site approved research in one of the emirates on both the male and female campuses. The Executive Director approved the invitation to participate in the study, and the Senior Marketing Officer shared the email with the survey link. Simple random sampling was chosen from the various methods as it is accurate and easy to perform (Kyriazopoulos & Samanta, 2011). With a sample size of 183 participants, the central limit theorem was applied, ensuring that at a 95% confidence level, the statistical error was less than 10%.

Data for this study was collected using demographic characteristics survey and a questionnaire. The questionnaire was a Likert scale with five options (strongly agree = 5, agree = 4, neither agree or disagree = 3, disagree = 2, and strongly disagree = 1).

The research tool used in the present investigation was constructed especially for this purpose. Specifically, the questions were categorized into two categories as follows:

- Group 1 - The demographic characteristics: This group refers to the gender, age, education, employment, and work experience of each participant.
- Group 2 – The group of the Elements of Self-Directedness: This group contains three questions that refer to the elements of Self-Directedness. The questions were formed using a Likert 5 scale type, with the aim of indicating the level of impact of each andragogical element.

3.1 Research Question and Hypothesis

This research study aims to examine whether gender differences affect the perceptions in the andragogical tenet of self-directedness of adult undergraduate learners in hybrid learning in the United Arab Emirates.

So, considering the above research target, the research question that is formed is: Is there a gender difference between male and female perspectives in the andragogical tenet of self-directedness in hybrid learning in the United Arab Emirates?

The following research hypothesis was formulated:

H⁰: There is no difference in the opinions of male and female students concerning the andragogical tenet of self-directedness in hybrid learning in the United Arab Emirates.

H¹: Opinions concerning the andragogical tenet of self-directedness in hybrid learning in the United Arab Emirates differ depending on the student's gender.

Statistical Analysis and Findings. Note that there were separate examinations of whether or not H₀ is rejected for each question in the questionnaire. A sequence of various statistical methods, derived from either descriptive or inferential statistics, will be performed to examine the rejection or acceptance of the research hypotheses.

After collecting and organizing the data, frequency tables and various statistical measures, such as mean, median, and standard deviation, were found to describe and analyze (Benos, 1997).

The method of inferential statistics used to test the hypotheses is the Independent-means t-test. This test is used when there are two experimental conditions and different participants are assigned to each condition (this is sometimes called the independent-measures or independent-samples t-test). The independent t-test and the dependent t-test are parametric tests based on the normal distribution. As the assumptions of normality were not satisfied, the non-parametric equivalent Mann-Whitney U-test was used instead (Field, 2010). This is the case in this research as there are two samples with different participants (male and female samples), independent of each other.

One of the assumptions for the independent-sample t-test to be used is the normality of the data. Analysis has shown that the data were skewed, so the assumptions of normality were not satisfied; hence, the non-parametric equivalent Mann-Whitney U-test was used instead (Field, 2010).

If the level of statistical significance is lower than the p-value of the test, then non-rejection (acceptance) of the null hypothesis will be enforced; this means that there are

no statistically significant differences between median values of the opinions of male or female subjects.

Finally, it has to be mentioned that all of the above descriptive or inferential statistical methods were performed using the statistical package SPSS (Statistical Package for Social Sciences) and Excel; the level of statistical significance used was 5%.

Running descriptive statistics analysis for the three questions that were related to Self-directedness showed the following outcomes (see Table 1).

Table 1. Descriptive statistics analysis for three questions related to self-directedness.

Gender		I was satisfied with the extent to which I was an active partner in this learning experience.	I felt I had control over my learning in this learning experience.	I knew why this learning experience would be beneficial for me.
Fe-male	Mean	4.26	4.29	4.26
	N	112	112	112
	Std. Deviation	0.791	0.843	0.888
Male	Mean	3.89	3.86	3.96
	N	71	71	71
	Std. Deviation	1.049	1.125	1.020
Total	Mean	4.11	4.12	4.14
	N	183	183	183
	Std. Deviation	0.916	0.982	0.950

The data indicated that female participants had a higher mean than males in their responses to the questions included in the self-directedness category. Upon analyzing each question separately, a statistically significant difference was noticed in the opinions between the two groups, at a significance level of 0.05, thus indicating that male

participants are significantly less self-directed than their female counterparts (see Table 2).

Table 2. Hypothesis test for three questions related to self-directedness.

Hypothesis Test Summary			
	Test	Sig.	Decision
I was satisfied with the extent to which I was an active partner in this learning experience	Independent Samples Mann-Whitney U-test	0.024	Reject the Null Hypothesis
I felt I had control over my learning in this learning experience	Independent Samples Mann-Whitney U-test	0.011	Reject the Null Hypothesis
I knew why this learning experience would be beneficial for me	Independent Samples Mann-Whitney U-test	0.044	Reject the Null Hypothesis

=

Combining the results, we observe a statistically significant difference in self-directedness between males and females, with a p-value of 0.016, as shown in Table 3.

Table 3. Hypothesis summary for self-directedness.

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
The distribution of Self-Directedness is the same across categories of gender	Independent Samples Mann-Whitney U-test	0.016	Reject the Null Hypothesis

4 Discussion

The above findings correlate to research done in Saudi Arabia. Gender differences in andragogical preferences were also found by Aljohani and Alajlan (2021). This study investigated how students at a university in Saudi Arabia rated Knowles' andragogical

principles with the help of the ALPDEQ created by Wilson in 2005 (similar to this research study). They found that male students had the lowest mean scores for readiness to learn and self-directedness. Abdulla and Ridge (2011) asked the question, "Where are all the men?" because higher education enrolment rates for men were below 30%. Abdulla and Ridge identified several factors that could explain the low male participation rates in higher education in the UAE. The first factor they identified was male students seeking employment in the military, police forces, and other public sectors. The poor academic performance of Emirati males at the high school level was identified as another factor. Abdulla and Ridge argue that Emirati male private school students had better English proficiency and were more likely to succeed at the tertiary level.

4.1 Strategies to Support Teaching and Learning of Male Students

The question is, how can male students be supported in becoming more self-directed? There has been some research on the teacher's role in fostering self-directedness. Du Toit-Brits (2019) recommended that teachers motivate students not only to learn but also to learn in meaningful and relevant ways. She also stated that students must be encouraged to take ownership of their learning, which will foster more learning independence (see Morris, 2019).

Francom (2010) identified four main prescriptive assumptions for nurturing students' self-directed learning skills in tertiary institutions. The first principle matches the self-directed learning level required in learning activities for student readiness. Secondly, learning direction should develop from teacher to student over time. The following principle requires teachers to facilitate the learning of subject knowledge and self-directed learning skills simultaneously. Lastly, teachers should allow students to practice self-directed learning in the context of learning tasks (see Fig. 1).

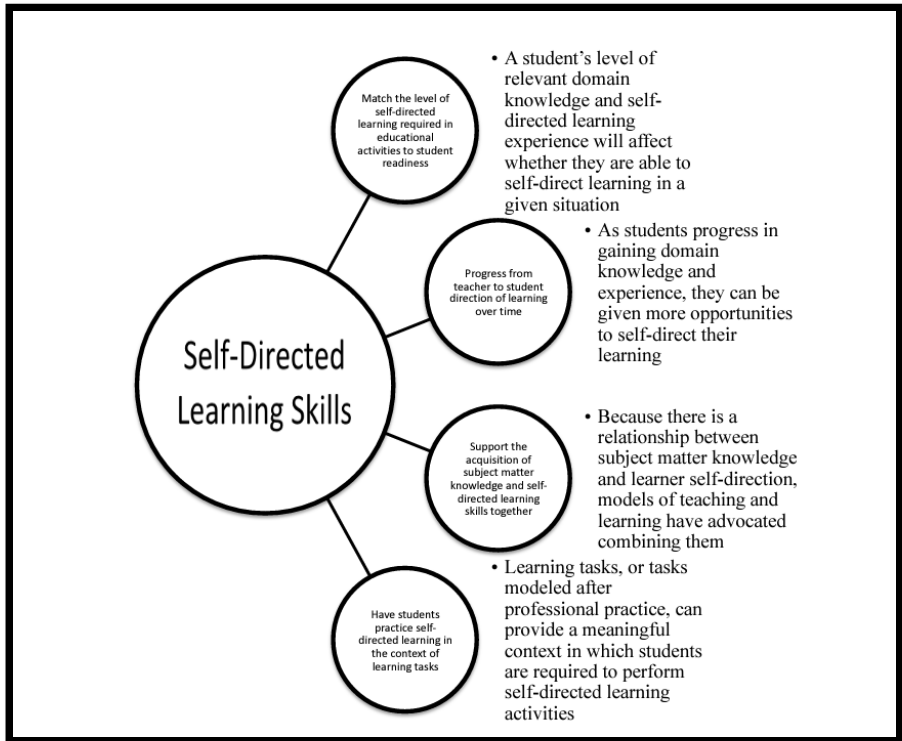


Fig. 1. General principles for fostering self-directed learning skills in formal education.

Francom, G. M. (2010). Teach me how to learn: Principles for fostering students' self-directed learning skills. *International journal of self-directed learning*, 7(1), 29-44.

Robinson and Persky (2020) offered a six-step process for students to foster self-directedness (see Table 4). The first step is for students to develop goals for study. Next, assessments need to be outlined for how the student will know they achieved their goals. The third step is to identify the structure and sequence of activities. This is followed by setting a timeline to complete the learning activities. In step five, learning resources are determined to help students achieve their goals. Lastly, each student should be assigned a mentor to provide feedback on their learning plan.

Table 4. Steps involved in self-directed learning.

Step	Definition	Example
Goal Setting	Development of learning objectives	By the end of the section of material, I will be able to describe the guidelines to treat pediatric hypertension
Assessment	Measurement that the student is progressing (formative assessment) and accomplished the goal (summative assessment)	Summative assessment: A mini-review and recommendations about pediatric hypertension Formative assessment: Meeting with the instructor to review each section of the paper as its generated
Activities	Defining the structure and sequence of activities	First define the relevant MESH terms. Next search PubMed. Fill in the gaps in knowledge with additional reading (articles or books)
Timeline	Benchmarking when activities will be accomplished	The final paper will be done by the last day of class. A draft will be provided to the instructor two weeks before the prior due date
Resources	Identifying the resources needed to accomplish the goal	PubMed, clinical pharmacist with pediatric specialty, textbooks, pediatric and cardiology organizations
Feedback	Identifying individual(s) who may provide feedback on the learning	Course instructor, pediatric pharmacist

Robinson, J. D. and Persky, A. M. (2020). Developing Self-Directed Learners. *American Journal of Pharmaceutical Education*, 84(3), 292-296.

To conclude, to cultivate and support successful self-directed male students, instructors must know how to scaffold learning to develop self-directness in adult learners. Adult educators are responsible for helping adult learners get to know their educational needs and creating opportunities for adult learners to make decisions about their continuing education (Kruszelnicki, 2020).

AMajlis Approach to Self-Directedness in Education. Grow (1991) differentiated between the ability to be self-directed and self-directedness. Grow argued that the level of self-directedness varies from subject to subject. However, self-direction is a personality trait that accompanies maturity. He further claimed that self-direction is transferable to all learning situations once learned. Grow defined self-directed learning as the extent of choice institutions give learners in their education journey. Adults want to be in charge of their education (Muduli et al., 2018). A self-directed learning environment is fundamentally dissimilar from an environment that is lecture-based. Robinson and Persky (2020) noted that teachers determine the goals, the assessments, and the pacing of courses in traditional classrooms. However, in the self-directed learning process, it is the learner's responsibility to set their own goals, determine how progress will be measured, have a choice in the sequence and timeline of activities, and seek feedback.

A novel approach is suggested to support male students in self-directedness, namely a majlis approach to education. According to the Abu Dhabi Department of Culture and Tourism (2015), The Emirati majlis ('council' or 'assembly') has been essential to political and social life in the United Arab Emirates. The practice of majlis allows the community to debate issues and make elders and government members aware of community difficulties (<https://abudhabiculture.ae>). The concept of majlis is of high importance and was listed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in 2015.

At the time of this study, there was no evidence in the literature that such an approach has ever been applied to the field of education in any other country or context. It is unsure how such an approach will affect education policy or governance. However, this concept could be used by stakeholders in education in the UAE to support students in setting goals, having a say in assessing progress, determining how learning activities will be ordered, choosing a timeline, and requiring instructor comments about their progress. Educational institutions can host majlis sessions where parents, teachers, students, and community members come together to discuss educational policies, challenges, and ideas for improvement. The concept of majlis discussions can also increase parental involvement. Furthermore, academic institutions can create opportunities for students to participate in majlis-style discussions to voice their opinions, ideas, and concerns about their education. Majlis discussions can empower students to take ownership of their learning, become more self-directed, and contribute to improving their educational environment.

Students' voices need to be heard for them to become self-directed. This concept has more profound implications beyond helping male students become more independent learners. It can also help the at-risk student population take ownership of their learning and improve their GPA.

5 Conclusion

The reasons why male students underperform and drop out of tertiary institutions are complex and not fully understood. As teachers, we have to realize that it is within our reach to improve male students' beliefs in their ability to take the initiative concerning their learning, identify their own learning goals, evaluate their own learning outcomes, and cultivate an increased self-efficacy when it comes to being a self-directed learner (Du Toit-Brits, 2019). Grow (1991) defined self-directed learning as learners' degree of choice within an institution. Therefore, it could be concluded that male students need more choices within the institution to be more self-directed in their learning.

We suggest a two-pronged approach. To foster self-directedness in male students, they have to be part of the learning and teaching process right from the inception. Teachers could explicitly teach and practice principles for fostering students' self-directed learning skills. In addition, a "majlis" approach could be considered to help male students set learning goals and choose learning activities to become more self-directed. Majlis-style UAE education meetings to support male students is a novel idea that warrants further exploration.

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