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RESEARCH REPORT

Pedagogy or Andragogy? An exploration into Teaching and Learning in the Sixth Form Sector and Implications for Curriculum.

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Abstract

Background and purpose: The rationale for the inquiry was to explore the principles of andragogy in the context of a 6th form college and to investigate if 6th form students are more aligned in their learning preferences to how children learn (pedagogy) or how adults learn (andragogy). This research was needed to address an understudied area of sixth form instruction as post-16 teacher training courses usually use principles of pedagogy even though students in this sector are not children, therefore this topic required further exploration.

Aims: The inquiry aims to investigate a significant challenge in post-16 teaching which is supporting students transition from school into college and the delivery of a curriculum that enables students to develop the confidence and independence to move from teacher-directed to self-directed learning. The focus of the inquiry is to establish to what extent 6th form students share the same characteristics as adult learners using the 5 assumptions of andragogy as a framework.

Design or methodology: The inquiry was implemented as a Learning Preferences questionnaire which was devised to measure the extent to which students agreed with statements relating to the 5 assumptions of andragogy. 873 sixth form students responded to an online questionnaire that was anonymously completed independently, in class or during tutorial. Quantitative analysis compared descriptive statistics on each dimension of andragogy.

Findings: The inquiry found that 6th form students showed preference for andragogy across all dimensions; there was no significant difference between students enrolled on level 3 & 2 courses. Level 2 students demonstrated views more aligned with pedagogy in relation to readiness and there was a significant difference in motivation between sixth form and FE students with regards to motivation.

Conclusions, originality, value and implications: In the context of sixth form teaching andragogy may be more relevant than pedagogy; explicit use of andragogical principles within the curriculum can help students to make the transition from school and recognition of motivation, experience and readiness to learn in the post-16 classroom may be a more suitable approach to teaching adolescent students than theories devised for the teaching of children.

Keywords: andragogy; post-16 education; sixth form; further education; independent learning; adult learning; student-centred learning

Context

This study was conducted in a state-funded sixth form college in Somerset, England. The investigation consisted of an anonymous online questionnaire administered to 2,135 students enrolled on full time level 3 and level 2 programmes¹ including a mix of A level, vocational certificates and extended diploma. 873 students returned questionnaires (41% response rate) with all students aged between 16-19 and are in year one or year 2 of their programme of study. A comparison group of 52 adult learners enrolled on Access to HE courses in a Further Education College were also surveyed to evaluate the findings against mature students returning to education all aged over 19.

Motivation, focus and questions

The rationale for the inquiry was to explore the principles of andragogy in the context of a 6th form college and to investigate if 6th form students are more aligned in their learning preferences to how children learn (pedagogy) or how adults learn (andragogy). The inquiry aims to investigate a significant challenge in post-16 teaching which is supporting students transition from school into college and the delivery of the curriculum in a way that enables students to develop the confidence and independence to move from teacher-directed to self-directed learning. The focus of the inquiry is to establish to what extent 6th form students share the same characteristics as adult learners using the 5 assumptions of andragogy as a framework.

Andragogy is defined as “the art and science of helping adults learn” (Knowles, 1980; p43), initially the theory assumed that adults learn differently than children however the theory was revised to approach andragogy on a continuum with pedagogy ranging from teacher-directed to student-directed learning depending on the adult. The theory outlines five core assumptions of the characteristics of adult learners (Knowles, 1984). “The five assumptions underlying andragogy describe the adult learner as someone who (1) has an independent self-concept and who can direct his or her own learning, (2) has accumulated a reservoir of life experiences that is a rich resource for learning, (3) has learning needs closely related to changing social roles, (4) is problem-centred and interested in immediate application of knowledge, and (5) is motivated to learn by internal rather than external factors” (Merriam, 2001; p5).

Inquiry plan and activities

The inquiry was implemented as a Learning Preferences Questionnaire which was devised to measure the extent to which students agreed with statements relating to the 5 assumptions of andragogy (See Appendix 1). This method was used to address the challenge of supporting students transition from school into college by exploring their attitudes to learning. A questionnaire was implemented to ensure that the inquiry was reliable and could be implemented on a large scale (over 800 students were surveyed). This method was also chosen to enable students to answer

¹ In the UK, courses are classified by levels based on their difficulty and complexity. Level 2 courses are roughly equivalent to GCSE, they are often taken by students aged 14-16 in school or as part of adult education and are typically needed to progress to Level 3 courses. Level 3 courses are more advanced than Level 2, usually taken after GCSEs at age 16-18 and required for university entry or higher apprenticeships.

anonymously as students may provide socially desirable answers when using other self-report methods such as interview or focus group.

The questionnaire consisted of 20 statements which were answered using a 7-point Likert scale with answers ranging from strongly disagree to strongly agree with a neutral option provided. Each item was developed from Malcom Knowles description of the characteristics of andragogy in *The Adult Learner* (Knowles et al; 2005) with some of the language adapted to be accessible for an adolescent student. Each dimension was assessed using 4 questions and scored to produce an average representation of each dimension with higher score indicating a preference for andragogical instruction and lower scores pedagogical. The dimensions that were measured were Readiness (*needing to understand the impact of own learning*) through statements such as “It is important to know why I am learning something”. Self-Concept (*independence & initiative of own learning*) for example, “I am responsible for my own learning”. Experience (*a resource for own learning*) such as “I find I can use my own intuition when learning something new”. Orientation (*application of relevant learning*) for example “I am more interested in learning when it is of immediate relevance to me” and Motivation (*driven to learn internally*) “I am driven to learn by my own ambitions and have pursued further education for myself”. The questionnaire was administered using Microsoft Forms and was completed anonymously and independently.

Ethical considerations and relationships

The college has a research culture, and students are often involved in practitioner led research as part of the Action Research model used for Continuing Professional Development (CPD). For the past 2 years the college has further empowered students to collaborate with teachers in research with a focus on students as learning partners. Specific to this inquiry participants were briefed and informed of the aim of the questionnaire, they were made aware that participation was voluntary and that all data would be anonymous and confidential. Participants were also reminded of their right to withdraw from the study once they had read the statements on the questionnaire and informed consent obtained to use their data for the purposes of educational research to improve teaching and learning. Once the questionnaire was completed students were debriefed and provided with my contact information. The questionnaire was administered using Microsoft Forms sent via email and Teams using college monitored accounts therefore there was no pressure for students to take part and as it was conducted independently outside of lessons further reinforcing participation is voluntary.

Findings

The responses from the questionnaires were initially scored to convert the descriptive responses into numerical data with each response assigned a specific value (Strongly Agree = 3 to Strongly Disagree = -3) From here the questions were grouped according to the dimensions they represented and mean scores calculated for each question to two decimal places (raw data available in the Supplementary Materials) The results indicated that students showed preference for andragogical instruction on all dimensions however some questions showed that certain aspects of adult learning were not of importance to sixth form students for example ‘I feel rejected when my teacher does not acknowledge my own life experience’ and I prefer to find my own solutions when faced with a

challenge in my learning'. Other areas indicated a greater degree of agreement for example 'Learning will help me to move to the next stage of my life' and 'I think it's important to have choice about how I learn'.

Following on from the initial analysis, responses were combined and scores for each dimension calculated to establish a mean score for each principle of andragogy.

Table 1: Mean values by question (scale ranges from -3 to 3)

Readiness	
It is important to know why I am learning something	2.01
I think what I learn should be of value to me in my life	2.05
I am at a point in my life where I am ready to learn	2.01
Learning will help me to move to the next stage of my life	2.25
Self-concept	
I am responsible for my own learning	1.9
It is important to me that my teacher sees me as independent	1.67
I think the classroom should be a collaborative learning environment	1.73
I think it's important to have choice about how I learn	2.12
Experience	
My own experience is a valuable resource that helps me learn	1.87
It is important to me that what I learn can relate to my own life experience	1.41
I feel rejected when my teacher does not acknowledge my own life experience	0.25
I find I can use my own intuition when learning something new	1.55
Orientation	
It is important to me that my learning helps me to acquire skills	1.92
I learn most effectively when information is applied in a real life context	1.63
I am more interested in learning when it is of immediate relevance to me	1.33
I think it is important to learn information that I can use in my life now	1.59
Motivation	
I prefer to find my own solutions when faced with a challenge in my learning	0.95
I am driven to learn by my own ambitions and have pursued further education for myself	1.65
I am motivated to learn by a desire for personal growth and fulfillment	1.69
I am motivated to attend lessons for my own development rather than to avoid consequences	1.74

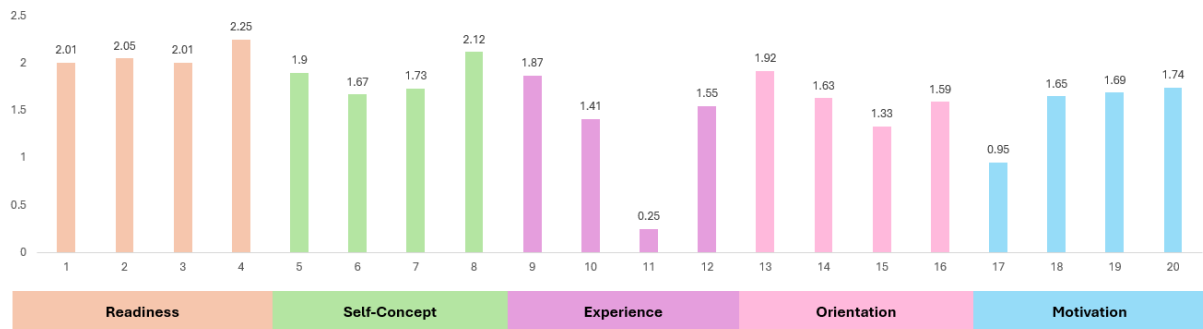


Figure 1: Bar graph comparing mean scores for each question on the Learning Preferences Questionnaire

Results indicate that some dimensions are more relevant to sixth form students for example the highest score was for readiness to learn, this suggests that students showed a strong preference for understanding the impact of what they are learning. This has important implications for teaching and curriculum design. Interestingly students generally showed little agreement that their own experience is a resource for their learning, this is more in line with pedagogical instruction where children have limited experience of the world and therefore rely on the teacher to contextualise the learning and to provide solutions to novel problems.

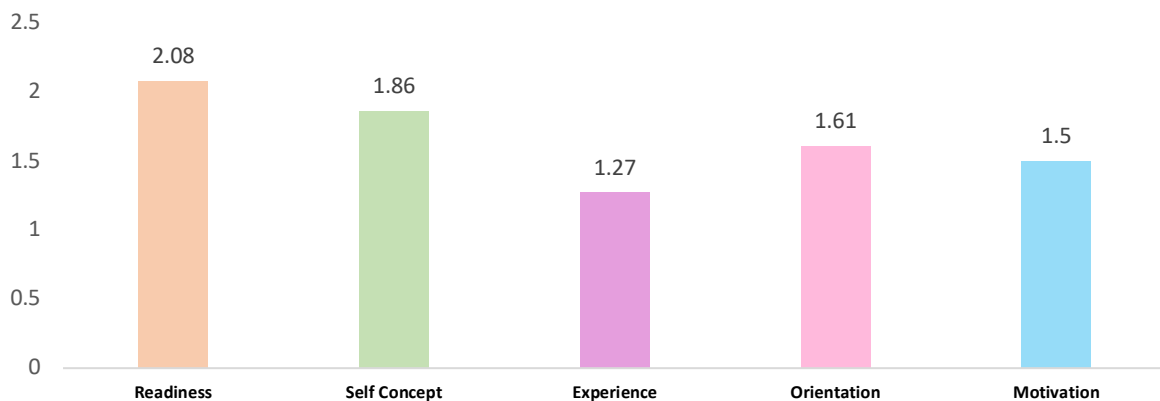


Figure 2: Bar graph comparing mean score on each of the 5 dimensions of andragogy.

To assess if there was a statistically significant difference between level 3 year 1, level 3 year 2 and level 2 students a One-Way ANOVA (analysis of variance) was carried out for each dimension. The one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups.

Although small differences in the mean values for each dimension (particularly for level 2 students) these differences were not statistically significant for any of the dimensions at the 0.05 level of significance and the standard deviation reveals a generally consistent level of agreement.

Table 2: Comparison of statistics from ANOVA. F is \leq than p at 0.05 therefore the difference is not statistically significant.

	Readiness	Self-concept	Experience	Orientation	Motivation
SD	0.3832	0.2628	0.7022	0.297	0.2799
F value	0.19132	0.17706	0.08631	0.16352	0.19176
p value	.828338	.839876	.917872	.851013	.827985

However, although not statistically significant there is an interesting finding in relation to the statement 'I am at a point in my life where I am ready to learn'. This is a revealing finding as the students are all of a similar age, therefore the use of pedagogy or andragogy may be more relevant to the level of course rather than the age of the student.

Table 3: Comparison of mean scores for each dimension of andragogy between Level 2 and Level 3 students in year 1 and year 2 of their programme of study.

	Readiness	Self-Concept	Experience	Orientation	Motivation
Year 1	2.12	1.89	1.18	1.78	2.03
Year 2	2.24	2.01	1.42	1.78	1.94
Level 2	1.91	1.89	1.56	1.94	1.62

To explore this, the same questionnaire was administered to mature students from an FE college enrolled on Access to HE courses, the responses were analysed and in the same way and compared with some revealing findings. The results were surprisingly similar for some dimensions, for example there was very little difference between Orientation & Experience, however there was a more noticeable difference between attitudes towards Motivation. In order to assess if this difference was significant a Mann Whitney statistical test was used, this was implemented as the study used unrelated ordinal data that is not normally distributed. Descriptive analysis revealed a difference in the Median values (2 for sixth form students and 3 for mature students) This meant that sixth form students did not agree that they prefer to find their own solutions when faced with a challenge in their learning, from this it is inferred that the motivation is more external from the teacher rather than intrinsic from the student. This difference in motivation between sixth form and mature FE students was statistically significant at 0.05 for a one tailed test with $Z = -6.6139$.

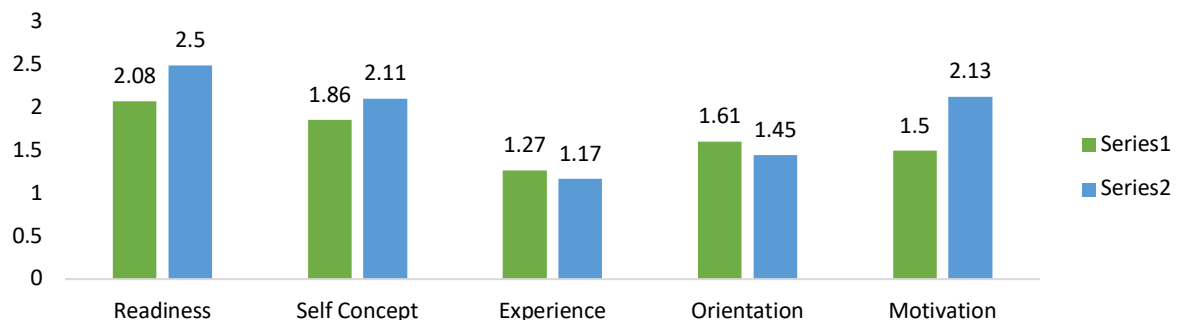


Figure 3: A Comparison between mean scores on each dimension of Andragogy between Sixth Form students (Series 1) and mature FE students (Series 2)

It was expected that there would be a general preference for Andragogy, but it was surprising the extent to the similarity to mature students in FE in relation to Experience and Orientation. Younger adults are generally extrinsically motivated in comparison to older adults however the statistically significant finding for this dimension was not expected.

Changes to practice

In response to the findings there needs to be more explicit focus on the use of andragogical instruction in the teaching of sixth form students and this is something that is going to be explored at a cross-college level as part of staff development training. The use of Andragogy has already been embedded in our internal training provided to Early Career Teachers (ECT's) and qualifying teachers who are employed at the college as a complimentary approach to pedagogy, this has been well received. Using each of the dimensions there are clear preferences that students have that can be implemented into the classroom. For example, students do need to know why they are learning something, this does not always need to be exam driven but use opportunities to explain the purpose of content and order of curriculum. Beyond the classroom there are also some important implications, adults need to feel that they are ready to learn and that the learning will help them to move to the next stage of their lives, this may be of relevance to those in school liaison and in admissions roles as well as progress tutors (staff who support the overall progress and pastoral development of students). In comparison to mature students sixth form students do not score as highly on Readiness to learn, this may be due to raise in participation age and that post-16 study is a continuation of compulsory education and not something that students have pursued independently, choosing to remain in education rather than other progression routes after school.

The area where there was the most variation in score and of significance was Motivation, this is expected as intrinsic motivation is more associated with adulthood, but understanding motivation in the context of Andragogy can mean that teachers can implement interventions that can support students to make that transition from extrinsic to intrinsic motivation which is associated with one of the most significant factors to achieve a goal (Ugah, 2008). Another factor which increases intrinsic motivation is giving students an opportunity to choose learning activities they have in the classroom (Lowman, 1990). On the questionnaire one of the most highest scores was for 'I think the classroom should be a collaborative learning environment' this means that when students have an element of autonomy over their learning, they will more easily situate themselves in their learning and feel more motivated to engage with independent learning activities (Kearney, 2008). Therefore another change to practice is to provide students with more choice about selecting tasks to complete both inside and outside of the classroom.

Reflective evaluation on the process

The creation of the Andragogy measure is a strength of this inquiry, using the characteristics of adult learners each dimension was represented with 4 questions and a range of responses with a 7-point Likert scale also means that student's preference will most likely be represented. Validity of the

inquiry was also improved through the completion of the questionnaire anonymously. The findings revealed an interesting preference for Andragogy which has not been extensively researched with adolescent students in a sixth form context. There were some limitations with the questionnaire, for example the question 'I feel rejected when my teacher does not acknowledge my own life experience' yielded negative responses across all participants, this may be because of the emotive language of 'rejected' in the question, this was a principle of Andragogy outlined by Knowles but in the context of 2024 it may not be as relevant and therefore if this study was implemented again this question would be adapted as it may be skewing the dimension of Experience (which was the lowest scoring area across all participants).

The inquiry challenged my assumptions about pedagogy and its relevance to post-16 teaching, I had not considered that theories for teaching are for children and that it may not be appropriate for college students. The changes in practice that have been implemented have yet to be embedded to assess the impact however andragogy is being used as a framework to inform staff development and students in this setting show alignment to adult characteristics in their learning preferences.

Next steps

In order to support students in their transition from school it would be useful to establish the learning preferences of Key Stage 4 students to assess if they are more aligned to pedagogy as predicted by the literature. The principles of andragogy are going to be more explicitly shared with students on induction to the course (and potentially on a wider scale once trialled in A Level Psychology) and embedded in the curriculum. Andragogy is going to be delivered to staff during whole college training sessions and the findings of this inquiry will also be shared with colleagues as the findings from the questionnaire do reveal preferences for adult learning strategies on some dimensions. Going forward I am going to provide students with specific support around independence and motivation with scaffolding of autonomy and collaboration. Sixth form teaching involves supporting a range of students who have diverse secondary school experiences in a range of contexts and using andragogy as a framework will help students make the transition from school to college and college and beyond.

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Appendix: Learning Preference Questionnaire (adapted in Microsoft Forms to be sent electronically)

Devised Scale on the Assessment of Andragogical Dimensions in Adolescent Learners

The following scale is an assessment of the dimensions of andragogy proposed by Knowles (1998) measuring attitudes towards the assumptions of how adults learn. The scale measures the extent to which learners agree with the principles of adult learning on a 7-point Likert Scale to be administered on Microsoft Forms.

1	2	3	4	5	6	7
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree

Readiness: Adults need to understand the impact of their learning

- It is important to know why I am learning something
- I think what I learn should be of value to me in my life
- I am at a point in my life where I am ready to learn
- Learning will help me to move to the next stage of my life

Self-concept: Adults are independent and take initiative of their own learning

- I am responsible for my own learning
- It is important to me that my teacher sees me as independent
- I think the classroom should be a collaborative learning environment
- I think it's important to have choice about how I learn

Experience: An adult's experience is a resource for their learning

- My own experience is a valuable resource that helps me learn
- It is important to me that what I learn can relate to my own life experience
- I feel rejected when my teacher does not acknowledge my own life experience
- I find I can use my own intuition when learning something new

Orientation: An adult requires application of relevant learning

- It is important to me that my learning helps me to acquire skills
- I learn most effectively when information is applied in a real life context
- I am more interested in learning when it is of immediate relevance to me
- I think it is important to learn information that I can use in my life now

Motivation: Adults are motivated to learn internally.

- I prefer to find my own solutions when faced with a challenge in my learning
- I am driven to learn by my own ambitions and have pursued further education for myself
- I am motivated to learn by a desire for personal growth and fulfillment
- I am motivated to attend lessons for my own development rather than to avoid consequences

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