

Emerging adulthood and its effect on adult education

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It is during their late teens and early twenties that most students attend a university or other institution of higher education. Biologically, these students are adults. However, studies show that there is a delay in maturing. Arnett (2000) introduced the term “emerging adulthood” in reference to the stage of life between adolescence and adulthood. Adolescent behaviour can be observed well into the twenties, as confirmed by this study. In total, 118 participants, aged 21 to 65, from a statistics course were asked about their need for adult learning methods. The results show that there is a strong positive correlation between age and the need for methods of adult education, and that students younger than 28 are not necessarily ready for adult education.

Keywords: *emerging adulthood, teaching, adult education, andragogy*

Introduction

A recent study on the importance of adult educational methods for teaching statistics courses (Meier, 2016) produced an important result.

The research identified strong support for the assumption that the cultural process of growing up lags behind the biological process of becoming an adult. This observation is in line with another recent study about American adolescents (Twenge et al., 2016). Within the field of adult education, this is a significant conclusion because it makes little sense to use adult education methods when the target group is not yet adult in its behaviour and does not show a distinct need for the methods. It is therefore important to consider age when teaching adults. As this research shows, this applies particularly up to the age of 28.

The goal of this paper is to provide evidence of a statistically significant relationship between age and the need for teaching methods as stipulated in adult-education theories.

Emerging adulthood and adult education

Lifelong learning has become an important field in modern society, and adequate teaching methods, as postulated in theories of adult education, are needed to support it. What most educational theories disregard, however, is the question of when adulthood begins, and thus the focus is seldom on a clear delineation between early adulthood and full adulthood. The most common age for legal adulthood is 18 (Wikipedia, n.d.). Biologically, adulthood begins slightly earlier, somewhere between the ages of 16 and 17 (Gehlbach, 2014).

In 2000, Jeffrey Arnett coined the new term, “emerging adulthood”. Arnett (2015) states:

Emerging adulthood is defined primarily by its demographic outline. Longer and more widespread education, later entry to marriage and parenthood, and a prolonged and erratic transition to stable work have opened up a space for a new life stage in between adolescence and young adulthood, and ‘emerging adulthood’ is what I have proposed to call that life stage (p. 8).

Another exponent of emerging adulthood, Elmore (2012), writes of a gap between legal and cultural adulthood:

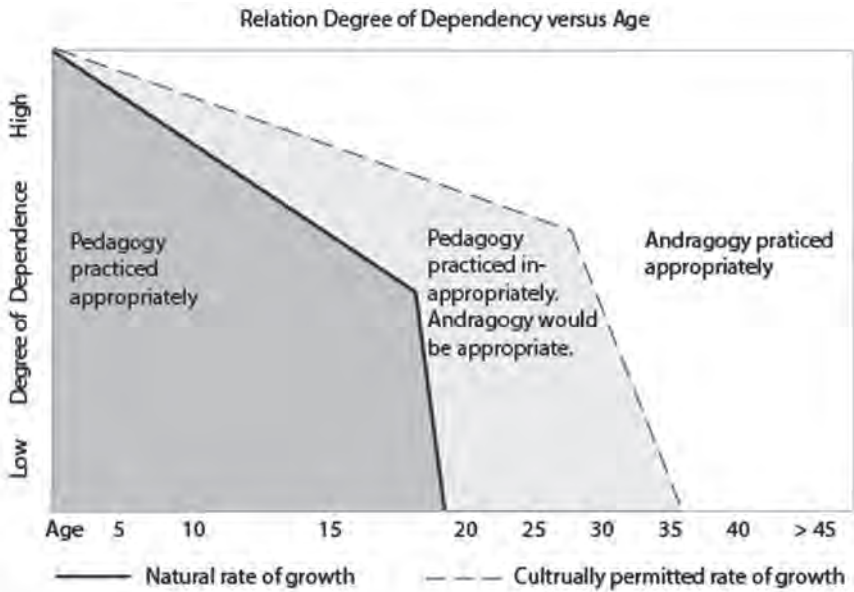
Educators and social scientists are mourning today’s generation of kids who have postponed growing up. They lament students’

delayed entrance into adulthood. Adolescence, in fact, has been prolonged among millions of teens and young adults. I have lost count of the number of university deans who've told me: 'Twenty-six is the new eighteen'. In a nationwide survey, young adults agree (p. 1).

As early as 1973, Malcolm Knowles introduced his theory of andragogy as a concept distinct from pedagogy. Knowles was of the opinion that adults have different learning needs from children or adolescents. Within his model, he states that there is a culturally induced lag in growing up, and notes:

But it is my observation that in the American culture (home, school, religious institutions, youth agencies, governmental systems) assumes – and therefore permits – a growth rate that is much slower (Knowles et al., 2015, p. 42).

Figure 1. Curves showing the prolonged practice of pedagogy



(Note: From *The adult learner*, by Knowles et al., 2015, p. 42)

Figure 1 exemplifies the slower growth rate through two different curves of decreasing dependency, where the first curve shows biological

development and the second shows the culturally allowed, slower development. The difference between the two curves means that, biologically, human beings reach adulthood before the age of 20. Coming of age, however, is a function of culture, and in our modern society adolescent behaviour can be observed until a much later age.

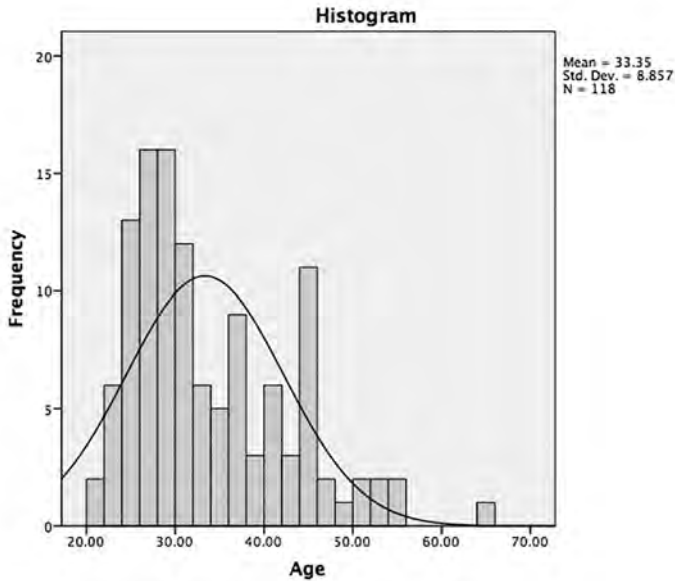
This assumption is particularly relevant to theories of adult education. If a 23-year-old student still displays the learning patterns of a teenager, teachers cannot rely on adult-education theory alone. Thus, when exploring patterns of adult learning, it is important to investigate the correlation between age and adult education principles.

Correlation between andragogical needs and age

Andragogy is a term that was primarily used by Knowles from the early 1980s onward (Knowles, 1980). His theory of andragogy laid out different principles that were essential for teaching adults. Through these principles, he wanted to establish a clear demarcation from methods of pedagogy. Knowles was certainly not uncontroversial in his thinking (see, for example, Grace, 1996; Rachal, 2002; Houde, 2006), and his theory is still questioned today. It was precisely because of this controversy that Meier (2016) chose to examine Knowles's individual principles through an empirical study in order to determine whether they could be confirmed. Meier also investigated whether there were certain factors, such as gender, field of study, or age, that influenced the andragogical principles. As mentioned, age showed a particular influence, as younger learners were less receptive to adult learning methods. This article will look specifically at the relationship between age and andragogy.

Data

The sample was drawn from individuals enrolled in statistics courses at the University of Zurich. The 118 participants were between the ages of 21 and 65 and had all voluntarily enrolled in the courses. The large age range of the participants makes this dataset particularly valuable. Often only narrow age groups are examined, especially within academic environments. With this sample, we had the opportunity to compare adults across a broad age range, from early education to retirement. The distribution in the histogram in Figure 2 illustrates this fact.

Figure 2. Distribution of age

While the age distribution was very heterogeneous, there was a remarkable degree of homogeneity in motivation, since all participants were there only because they had to do statistical analysis. That heterogeneity in the sample is principally based on age means that we can more easily identify differences that depend on age alone.

The statistics courses in which the participants were enrolled were offered as continuing education courses through the university's information technology services. The students were asked to complete an online questionnaire, and 118 responses were collected. Three groups of individuals were identified from these responses: students, employees, and doctoral students (see Table 1).

Though limited in size, this sample was appropriate because it differed from the general university student population, who study not merely because they want to learn, but because they want to pass their courses and get promoted (Knowles et al., 2015, p. 42). Respondents in this study participated in further education as typical adult learners.

Table 1. Groups of respondents

	Frequency	Per cent	Valid per cent	Cumulative per cent
Student	67	56.3	56.3	56.3
Employee (researcher or similar)	31	26.1	26.1	82.4
Doctoral student	21	17.6	17.6	100.0
Total	119	100.0	100.0	

These data are important because they include people who voluntarily participated in a course. One major bias of adult research is that it often involves people who are forced to participate in a course. Because one prerequisite of adult education is intrinsic motivation, the classical principles of adult education apply only to a limited extent when students learn due to outside pressures.

Data collection

All data were collected through an online questionnaire, which included questions regarding personal background, current situation, and learning preferences, as well as questions framed by Knowles's et al. (2015) principles of andragogy.

Constructing the items for andragogy

One part of the questionnaire collected data concerning andragogy. The goal of this section was to find answers regarding Knowles's six postulates: motivation, readiness, need to know, self-concept, orientation, and experience. A factor analysis was performed to determine whether the total of all items could be structurally grouped into six categories. A reliability analysis was then conducted to test the internal consistency of the categories. Of the six individual postulates, a generalised variable, "andragogy", was created to represent the mean of the six individual postulates. This generalised variable made it possible to clearly show a complete view of the strength of individual participants' needs for andragogical principles.

Findings

Knowles's et al. (2015) theory posits that andragogy slowly begins to replace pedagogy toward the beginning of adolescence. The theory also states that, in Western culture, this process lags slightly behind biological development. Therefore, one should expect that age will influence the perception of andragogy. When participants are grouped into older and younger categories (older than 27.5 and younger than 27.5), a clear difference can be found. Table 2 clarifies this difference for the mean values for the attribute andragogy.

Table 2. The means of two age categories for andragogy

Age	Mean	N	Std. deviation
< 27.5	6.82	22	1.42
> 27.5	7.38	60	0.90
Total	7.23	82	1.08

(Note: The theoretical maximum mean is 10.)

It is also important to note the relationship between age and andragogy, as the correlation is low ($r = 0.204$, $p = 0.68$) and not significant. The reason for the low correlation lies in our use of the whole sample. The situation changes when the results are viewed within a particular age group, as in Figure 3. Among younger participants, a high correlation ($r = 0.661$, $p < 0.001$) can be found, whereas no correlation ($r = 0.045$, $p = 0.734$) exists among the group of older participants. For a better understanding, the two groups are compared in Table 3.

Table 3. Correlation and regression for age by andragogy among groups of younger and older participants, without the identified outlier

Age	Model	R	R Square	Adjusted R Square	Std. error of estimate
Younger than 27.5	1	0.661	0.437	0.407	1.106
Older than 27.5	1	0.045	0.002	-0.015	0.907

(Note: Predictors: (Constant), Age)

This pattern is displayed in a scatter plot (Figure 3) with a line representing each group. The group that contains course participants younger than 27.5 years shows a steep slope. Participants older than 27.5 years display a line with nearly no slope.

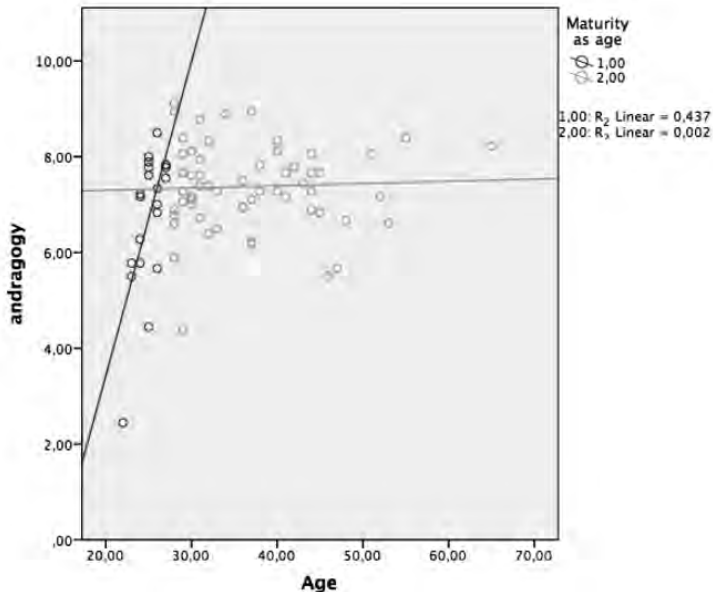
Figure 3. Relationship between age and andragogy among two groups

Figure 3 suggests that age can influence andragogy only to a certain point, specifically up to between 27 and 30 years of age. Once this threshold has been reached, age no longer has an influence on andragogy, which leads to the conclusion that the need for adult education is a maturing process. While a person is undergoing this process, the need for andragogy continues to grow; however, once maturity is reached, the process stops.

These findings confirm the hypothesis that there is a correlation between age and andragogy. More specifically, the results suggest that this relationship is confined to young adults. The correlation between age and andragogy is strongest in the first age category, which includes participants up to 27.5 years old. Participants in the second age category were all older than 27.5 years, where there is no such correlation.

Based on the above results, we analysed the data using floating age groups, beginning with the first group of participants, who were younger than 24 years old. The next group contained participants up to 25 years of age, the following group participants up to 26, and so on. Twenty-five

such age groups were formed, and for each group, a correlation analysis was conducted for age and andragogy. The results summarised in Figure 4 were unexpected. The graph shows an initial negative slope, which slowly decreases and ends with a mostly constant horizontal line.

Figure 4. Floating correlations for Age by Andragogy

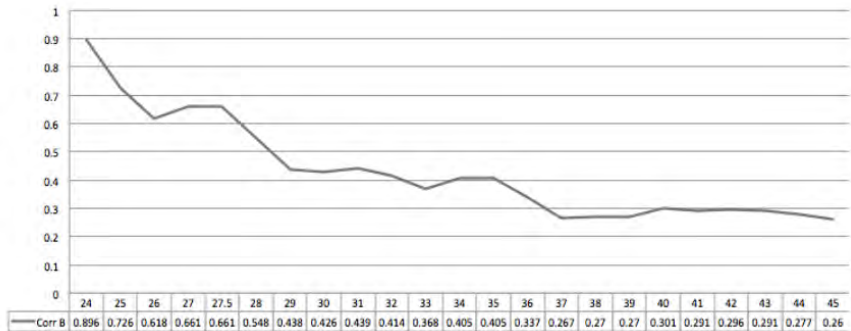


Figure 4 illustrates that the groups of younger adults display a high correlation between age and andragogy, while the groups of older adults display a lower correlation. In groups with an upper age limit of approximately 35 years, there is only a slight correlation. The group with an upper age limit of 35 years shows a mean age of 27.6 years. One possible interpretation is that after the age of 28, andragogical preferences stabilise and do not increase further with age. This interpretation implies that, in younger adults, these andragogical preferences are growing and are not yet fully developed. As mentioned earlier, this result suggests that there is a maturity process. Until the age of about 28, adolescents' preferences continue to mature. After that point, adolescents have reached maturity, and no further changes can be observed.

Discussion

The findings of this study provide reasonable evidence that the principles of adult education, as first stipulated by Knowles (1973), depend on age. The research revealed that older adults rate the importance of adult-education methods significantly higher than younger adults. It was shown that only after the threshold of about 28 years of age do adult education methods seem to be generally accepted by the participants and are perceived as the appropriate means of

teaching adults. This could be interpreted as a kind of maturation process towards andragogy. Arnett (2006) has coined the term “emerging adulthood”. In his definition, it is the space in a new stage of life between adolescence and young adulthood. It is significant that the defined stage of life for emerging adulthood is almost exactly the same as the phase of increasing importance for andragogic principles we found. Arnett (2006) states:

I have described emerging adulthood as lasting from about age 18 to age 25, but always with the caveat that the upper age boundary is flexible. Twenty-five is an estimated age that does not apply to everybody. For some people the end of emerging adulthood comes earlier, and for many it comes later, which is why I often use age 29 as the upper age boundary (p. 311).

Hill et al. (2015) propose that structural and cultural boundaries may limit the extent to which emerging adulthood is experienced in any given country or society. They specifically point out that groups with low socioeconomic status might experience emerging adulthood differently. Our results are limited to university students and researchers, and thus, further conclusions from this study can be made mainly within this environment.

The present study did not further investigate the reasons for the differences between age groups. It only states that there is a connection between age and andragogical principles. The next step in this research would be to investigate the reasons for this difference. A qualitative approach would help to uncover hidden patterns which a purely quantitative method cannot.

Conclusion

For Elmore (2012) adolescence is not merely a doorway into adulthood, but an extended season of life. Arnett (2015) states that emerging adulthood encompasses the time span between the ages of 18 and 25. The results of this study confirm this extension of adolescence within the context of adult education and clearly show that participants have a real need for methods of adult education only from the age of 27 onward. This also supports the claim in Knowles (1973) that young people are growing up more slowly today than before. We can conclude that this research supports both Arnett’s (2015) and Knowles’s (1973) theories.

For those who educate adults, it is important to be aware that, up to the age of 28, young adults are not necessarily ready for methods of adult education. In a more moderate formulation, methods of adult education may be useful to a limited extent for students younger than 28. However, educators should also consider that there is a high variance within the age range of 21 to 28 years. It cannot be concluded that it is necessarily wrong to apply adult-education methods when teaching students who are younger than 28, but these methods are adequate only to a limited extent. Further research is needed to examine adult education methods more closely from the perspective of emerging adulthood. This could lead to the development of a specific or adapted teaching style for university students. In view of the societal and monetary importance of university education, this is a thought worth considering.

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Data

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David Meier is head of the advanced training programme for computer skills at University of Zurich and was teaching statistics as part the interdisciplinary skills programme for over 15 years. He is also a Research Fellow at the National School of Leadership in Pune, India. One of his ongoing interests is adult education especially in the field of statistics.

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