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Factors associated with occupational therapy students' preferences for courses and teaching

Tore Bonsaksen[1,2*]

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*Corresponding author: Tore Bonsaksen, Faculty of Health Sciences, Department of Occupational Therapy, Prosthetics and Orthotics, Oslo Metropolitan University, Oslo, Norway; Faculty of Health Studies, VID Specialized University, Sandnes, Norway
E-mail tore.bonsaksen@hioa.no

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May Cheng, Education University of Hong Kong, Hong Kong

Additional information is available at the end of the article

Abstract: *Background:* Students' preferences for teaching have been associated with their own approaches to studying. However, whether teaching preferences are associated with a set of student characteristics is yet unknown. *Aim:* To investigate whether sociodemographic, education-related and personal factors were associated with preferences for teaching among Norwegian occupational therapy students. *Methods:* One hundred and forty-six students (mean age 23.7 years, 78.8% women) participated in the study. Self-report questionnaires were employed, including the Approaches and Study Skills Inventory for Students, the Rosenberg Self-Esteem Scale, and the General Self-Efficacy Scale. Differences between student cohorts were analyzed with one-way analyses of variance and χ^2-tests, whereas factors associated with the students' teaching preferences were analyzed with linear regression models. *Results:* Overall, the students preferred teaching oriented toward "transmitting information" over teaching oriented toward "supporting understanding". Higher age, higher levels of general self-efficacy and spending more time on independent study were associated with having a stronger preference for the "supporting understanding" teaching type. *Conclusions:* Compared to their counterparts, students of higher age, who study more independently, and who have higher general self-efficacy are more inclined to prefer teaching that supports understanding, which is compatible with the expectations in higher education institutions.

Tore Bonsaksen

ABOUT THE AUTHOR

The author is part of an international research collaboration investigating "approaches to studying" and other aspects related to learning among undergraduate occupational therapy students in four countries. He will also be heading a research project which will expand from the present study in several ways. First, a longitudinal research design will be employed, such that the students' development in study approaches will be analyzed across their three years of studying. Second, the impact of the perceived learning environment on the students' approaches to studying will be examined. Third, the participants will be recruited from several universities, thus allowing a comparative analysis of a different occupational therapy education programs in Norway. Data collection for the study begins in January 2018.

PUBLIC INTEREST STATEMENT

Using theory concerned with students' "approaches to studying" as the point of departure, this study found that students of higher age, who spent more time on independent study, and who had higher general self-efficacy had a stronger preference for the "supporting understanding" teaching type. However, the "transmitting information" teaching type was generally more preferred in the whole sample. The results indicate that there may be a discrepancy between young students' preferences for teaching, on one hand, and the norms and expectations of lecturers in the higher education system on the other. Students who are more mature and generally self-confident display an attitude toward teaching that is more aligned with the norms and ideals of higher education institutions.

Subjects: Adult Education and Lifelong Learning; Educational Research; Education Studies; Allied Health

Keywords: higher education; occupational therapy; preferences for teaching; students

1. Introduction

Studies into higher education frequently use students' ways of relating to the study materials, often denoted as the approaches to studying (Entwistle, 1991; Entwistle & Tait, 1990), as the theoretical point of departure. Two main approaches to studying, emphasizing contrasting intentions, motives and strategies among the students employing them, have been conceptualized and refined over the years (Entwistle, McCune, & Tait, 2006; Tait & Entwistle, 1996; Tait, Entwistle, & McCune, 1998). Students using a deep approach seek personal meaning in the study materials, and try to connect and contrast the ideas found in them. Using a deep approach often leads the student to go beyond the prepared syllabus. In contrast, students using a surface approach to studying are syllabus-bound and seek be able to reproduce study materials at exams. The motivation of surface-oriented students is to avoid failure and to pass exams, rather than to gain new or expanded understanding. A third type—the strategic approach—was later introduced to describe students with a strong motive for competition and achievement. Strategic students may adopt strategies from both the deep and the surface approaches, according to what will help them get the best possible grade in the particular course.

Prior research into students' approaches to studying has been in favor of the deep and strategic approaches, as opposed to the surface approach, and a desire to arrive at new understanding and to achieve good results is likely to assist in the learning process. Empirical evidence for associations between study approaches (higher scores on the deep and strategic scales, and lower scores on the surface scale) and better academic outcomes have been found across a range of countries and professional disciplines (e.g. Diseth & Martinsen, 2003; Diseth, Pallesen, Brunborg, & Larsen, 2010; English, Luckett, & Mladenovic, 2004; Herrmann, McCune, & Bager-Elsborg, 2017; Salamonson et al., 2013; Sharp, Hemmings, Kay, & Atkin, 2017; Valadas, Almeida, & Araujo, 2016; Ward, 2011), including occupational therapy (Bonsaksen, Brown, Lim, & Fong, 2017). The recent cross-cultural study found that higher scores on the seeking meaning and achieving scales, related to the deep and strategic approaches, respectively, were associated with higher grade point average (GPA) among the students. On the other hand, higher scores on the fear of failure scale, related to the surface approach, was associated with poorer GPA. However, two subscales (lack of purpose and time management) showed associations with GPA that were in the unexpected direction (Bonsaksen et al., 2017).

The students' own ways of approaching the studies are important for their learning process and subsequent outcomes, but so is their experience of the learning environment. A well-functioning learning environment has been shown to have both direct and indirect effects (mediated by study approaches) on learning outcomes. As Lizzio, Wilson, and Simons (2002) pointed out, perceptions of good teaching influenced the students toward using the deep approach. Conversely, perceptions of bad teaching were associated with more surface approach among the students. Diseth (2007), Diseth et al. (2010) and Sun and Richardson (2016) have reported similar associations between a positive learning environment and students' use of deep and strategic study approaches.

However, which types of teaching deserve to be given the name "good teaching" may vary considerably between students, depending on their preferences. Moreover, students who rate the quality of teaching in similar ways may not agree on the reasons for this evaluation. Considering the importance of students' perceptions of good teaching and of other aspects of the learning environment for their approach to studying (Diseth, 2007; Diseth et al., 2010; Lizzio et al., 2002; Sun & Richardson, 2016), little research has been concerned with students' preferences for different types of teaching. In the early stages of developing the *Approaches and Study Skills Inventory for Students* (ASSIST; Entwistle et al., 2006; Tait et al., 1998), one section was designed to assess students' preferences for different types of courses, teaching, and assessment. This section assessed the students' preference for a teaching style that supports the development of a more comprehensive understanding

(thought to be associated with a deep study approach), or alternatively, one that focuses on the teacher's transmission of information (thought to be associated with a surface study approach). Scores on the eight items revealed a distinct pattern related to preferences for deep versus surface oriented courses, exams, and teaching (Entwistle & Tait, 1990), a result which has been replicated later (Entwistle, Tait, & McCune, 2000).

In summary, there has been little research on students' preferences for courses and teaching. The theoretical underpinnings of the ASSIST instrument (Entwistle et al., 2006; Tait et al., 1998) and two studies (Entwistle & Tait, 1990; Entwistle et al., 2000) support the idea that such preferences correspond with the students' typical approach to studying, but this is an under-researched area. One recent study found that the students' age, prior higher education, time spent on independent study, and general self-efficacy levels were differently associated with their scores on the deep and surface scales of the ASSIST (Bonsaksen, Sadeghi, & Thørrisen, 2017). In this study, we explore whether a similar pattern of associations are revealed when the two different preferences for courses and teaching are used as outcome variables.

1.1. Study aim

The aim of the current study was to investigate whether sociodemographic, personal, and education-related factors were associated with occupational therapy students' preferences for courses and teaching.

2. Methods

2.1. Design and setting of the study

This study had a cross-sectional design and was conducted in the context of a cross-cultural study, including four different countries (Brown et al., 2016). In this substudy, only the data from the Norwegian students were used.

2.2. Participants and recruitment

To be included in the study, students needed to be enrolled in the relevant occupational therapy education program and provide informed consent to participate. All occupational therapy programs in Norway are three-year undergraduate programs leading to a bachelor's degree. Students from all three of the year cohorts participated in the study. A non-teaching member of staff distributed the questionnaires to students during breaks in classrooms in January 2015.

2.3. Measurement

2.3.1. Sociodemographic factors

Information regarding sociodemographic factors (age and gender) was collected by questionnaire.

2.3.2. Personal factors

2.3.2.1. The Rosenberg self-esteem scale. (RSES; Rosenberg, 1965) was used to assess the students' level of self-esteem. The original RSES has 10 statements with responses ranging 1–4 ("strongly agree" to "strongly disagree"). One example item is: "I take a positive attitude toward myself". An abbreviated Norwegian version with four items, the RSES-4, was used in this study. The four items were selected from linear regression analysis, and the scale consisting of the four extracted items were strongly correlated ($r = 0.95$) with the full 10-item version (Tambs & Røysamb, 2014; Ystgaard, 1993). The RSES-4 sum score ranges 4–16, with higher score representing higher self-esteem. In the Norwegian sample, Cronbach's α was 0.67 (Bonsaksen, 2015), which is lower than the internal consistency shown in other Norwegian studies (Bonsaksen, Fagermoen, & Lerdal, 2015; Tambs, 2004).

2.3.2.2. The General self-efficacy scale. (Schwarzer & Jerusalem, 1995) measures self-beliefs related to coping with challenges and demands in life. The scale consists of 10 items rated on a scale rated 1–4 ("not at all true" to "exactly true"), and a sum score is calculated by adding the scores on the 10

items. Thus, the General Self-Efficacy Scale (GSE) score range is 10–40, and higher scores indicate higher general self-efficacy. One example item is: "I can solve most problems if I invest the necessary effort". Psychometric studies of the GSE have consistently produced a one-factor solution (Bonsaksen, Kottorp, Gay, Fagermoen, & Lerdal, 2013; Leganger, Kraft, & Roysamb, 2000), and internal consistency (Cronbach's α) of the GSE scale in the Norwegian sample was 0.86 (Bonsaksen, 2015), which is considered very good (Fayers & Machin, 2007; Streiner & Norman, 2008).

2.3.3. Education-related factors

Data related to the students' preferences for courses and teaching were obtained from the Approaches and Study Skills Inventory for Students (ASSIST; Entwistle et al., 2006; Tait et al., 1998). In this study, we used a Norwegian instrument translation (Diseth, 2001) that has been psychometrically examined within the same sample (Bonsaksen & Thørrisen, 2017). Part C of the ASSIST, the *Preferences for different types of course and teaching,* consists of eight statements concerning teaching, course content, syllabus, and forms of assessment. Four of the statements reflect preference for teaching that supports the students' understanding, whereas four other statements reflect preference for teaching oriented toward transmitting information. The students are asked to rate on a 1–5 scale how much they like the type of teaching, course content, syllabus, or assessments described, 1 indicating "strongly dislikes", and 5 indicating "likes very much". One example item from the supporting understanding scale is: "Lecturers who encourage us to think for ourselves and show us how they themselves think". From the transmitting information scale, one example item is: "Lecturers who tell us exactly what to put down in our notes". Internal consistency of the four items constituting the supporting understanding scale was 0.61, and it was 0.51 for the items constituting the transmitting information scale (Bonsaksen & Thørrisen, 2017). Score range for both scales was 4–20.

One last item of the ASSIST (Entwistle et al., 2006; Tait et al., 1998) asks the students to think of the grades they have obtained and then perform an overall self-assessment in terms of how well they have been doing in the course so far. Students rated themselves on a 1–9 scale, where 1 indicated "rather badly", 3 "not so well", 5 "about average", 7 "quite well", and 9 "very well".

Each participant was registered as belonging to one of the three cohorts involved (1st year student = 1, 2nd year student = 2, and 3rd year student = 3). Previous higher education experience was dichotomized into two categories; having prior education from university or college (1) versus not having any prior education from university or college (0). The average number of weekly hours spent on independent study was registered as a continuous variable.

2.4. Data analysis

All data were entered into the computer program IBM SPSS version 24 (IBM Corporation, 2016). Descriptive analyses were performed on all variables using means (*M*), standard deviations (*SD*), frequencies, and percentages as appropriate. Differences between students in different study cohorts were examined with χ^2-tests (for categorical variables) and with one-way analyses of variance (for continuous variables). When conducting multiple comparisons between student cohorts, the Tukey Honest Significant Difference (HSD) correction was applied to adjust for inflating error rates.

To assess the extent to which preferences for courses and teaching could be explained by a set of independent variables, hierarchical linear regression analyses was performed, using the scores on the two different teaching preference types as outcomes in two subsequent analyses. These analyses also assessed the strength of the independent associations between each of the independent variables and the participants' preferences for each of the two teaching types. The hierarchy of the regression model was as follows: (1) age and gender, (2) self-esteem and general self-efficacy, and (3) cohort, prior higher education, and self-assessment of study performance. The level of statistical significance was set at $p < 0.05$.

2.5. Ethics

Approval for conducting the study was obtained from the Norwegian Data Protection Official for Research (project number 40314). The students were informed that completion of the questionnaires was voluntary, that their responses would be kept confidential, and that there would be no negative consequences from opting not to participate in the study.

3. Results

3.1. Participants

One hundred and sixty students completed the questionnaire. Of these, 146 students had valid scores on all the variables used in the current study, and these students constitute the present sample. The participants included all three year levels (first year $n = 52$, second year $n = 48$, and third year $n = 46$). The mean age of the students was 23.7 years ($SD = 4.1$ years), and female students were in majority ($n = 115$, 78.8%). The sample as a whole had higher scores on the teaching type "transmitting information" ($M = 17.6$, $SD = 2.2$), compared to their scores on the teaching type "supporting understanding" ($M = 15.4$, $SD = 2.6$). There were statistically significant differences between study cohorts regarding age, average time spent on independent study, and self-assessment of study performance. The study sample is described in Table 1.

3.2. Factors associated with preferences for courses and teaching

Being of higher age, having higher general self-efficacy, and spending more time on independent study were directly associated with a stronger preference for the teaching type "supporting understanding". The regression model was statistically significant, accounting for 15.7% of the data variance. On the other hand, none of the independent variables showed a direct association with the teaching type "transmitting information". The regression model for predicting this outcome was not statistically significant and accounted for 3.7% of the data variance. The results from the regression analyses are displayed in Table 2.

Table 1. The study sample ($n = 146$)

Variables	Total sample ($n = 146$)	1st year ($n = 52$)	2nd year ($n = 48$)	3rd year ($n = 46$)	
Sociodemographic factors	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*p*
Age	23.7 (4.1)	22.8 (4.4)	23.1 (2.4)	25.2 (4.6)	<0.001
	n (%)	*n* (%)	*n* (%)	*n* (%)	*p*
Female sex	115 (78.8)	42 (80.8)	36 (75.0)	37 (80.4)	0.61
Personal factors	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*p*
Self-esteem	12.3 (1.8)	12.2 (1.8)	12.4 (1.7)	12.5 (1.8)	0.68
General self-efficacy	28.3 (4.8)	27.7 (4.7)	28.6 (4.6)	28.6 (5.2)	0.58
Education factors	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*p*
Prior higher education	63 (43.2)	21 (40.4)	22 (45.8)	20 (43.5)	0.31
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*p*
Average time per week on independent study	9.3 (5.3)	11.1 (4.3)	6.7 (3.6)	10.0 (6.7)	<0.001
Self-assessment of study performance	6.1 (1.3)	5.6 (1.5)	6.3 (1.1)	6.5 (1.1)	<0.01
Supporting understanding	15.4 (2.6)	15.4 (2.9)	15.2 (2.5)	15.6 (2.5)	0.80
Transmitting information	17.6 (2.2)	17.9 (1.9)	17.4 (2.4)	17.4 (2.4)	0.43

Notes: Post-hoc tests (using the Tukey HSD correcting for multiple comparisons) showed that age was significantly lower among the first-year students compared to the second-year and the third-year students. Average weekly time spent on independent study was lower among students in the second-year cohort compared to students in the first-year and the third-year cohorts. Scores on the self-assessment of study performance was lower among students in the first-year cohort compared to students in the second-year and the third-year cohorts.

Table 2. Hierarchical linear regression analyses showing direct associations with the students' (*n* = 146) preferences for two different types of courses and teaching, controlling for all variables

Independent variables	Supporting understanding		Transmitting information	
Sociodemographic factors	β	*p*	β	*p*
Age	0.21	0.02	−0.09	0.31
Sex	0.08	0.38	0.09	0.36
Explained variance	7.0%	<0.01	1.9%	0.26
Personal factors	β	*p*	β	*p*
Self-esteem	−0.01	0.93	0.04	0.73
General self-efficacy	0.21	0.03	0.05	0.64
R^2 change	5.4%	<0.05	0.3%	0.78
Explained variance	12.4%	<0.01	2.2%	0.53
Education factors	β	*p*	β	*p*
Cohort	−0.03	0.71	−0.07	0.42
Prior higher education	0.05	0.59	−0.00	0.97
Average time per week on independent study	0.17	0.04	0.03	0.76
Self-assessment of study performance	0.02	0.80	−0.08	0.36
R^2 change	3.2%	0.27	1.5%	0.72
Explained variance	15.7%	<0.01	3.7%	0.73

Notes: Table content is standardized beta weights and corresponding *p*-values. Coding of categorical variables: Male = 0, female = 1. No prior higher education = 0, prior higher education = 1. For all other variables, higher scores indicate higher levels.

4. Discussion

The aim of the current study was to examine associations between sociodemographic factors, personal factors, education-related factors and preferences for courses and teaching among Norwegian occupational therapy students. The results showed that higher age, higher general self-efficacy, and spending more time on independent study were directly associated with stronger preference for the teaching type denoted as "supporting understanding". None of the independent variables were directly associated with stronger preference for the teaching type denoted "transmitting information".

The sample had similar scores on both teaching preferences across the three-year cohorts, and there was a small, but consistent preference for the "transmitting information" teaching type compared to the "supporting understanding" type (see Table 1). In comparison, Entwistle et al. (2000) described clusters of students who self-rated their academic performance from high to low, respectively. In that study, the group with the highest performance had mean scale scores of 17.4 (supporting understanding) and 16.2 (transmitting information), while the group with the lowest performance had mean scale scores of 10.2 (supporting understanding) and 18.6 (transmitting information). The second best group of high-performing students had mean scores of 15.6 (supporting understanding) and 17.5 (transmitting information) on these scales, which is similar to the scores found in the present sample. The comparison group was characterized as combining deep study strategies with higher levels on some of the surface subscales (syllabus-boundness and fear of failure), and also consisted of a high proportion of females from non-science courses, which could also describe the current study sample. Thus, in view of the study by Entwistle et al. (2000), our sample may be described as relatively high-performing—as indicated from their self-assessment of study performance (see Table 1)—but with mixed preferences for the two different approaches to courses and teaching.

In general, the independent variables employed in this study were not well suited to explain the students' preferences for the "transmitting information" teaching type. None of the variables were significantly associated with this outcome, and only 3.7% of the outcome variance was accounted for (see Table 2). This indicates that preferences for this teaching type were more or less the same across the different student characteristics measured in this study. The result somewhat contrasts the results of a previous study (Bonsaksen et al., 2017), in which higher age, higher self-efficacy levels, prior experience from higher education, and more time spent on self-study were associated with lower levels of surface approach to learning. Thus, the lack of associations indicate that although student characteristics can be used to predict a surface approach to learning, they may not at the same time predict a preference for teaching focused on the transmission of facts (Entwistle et al., 2000, 2006). A preference for teaching as "transmitting information" may be present regardless of the variations in student characteristics.

On the other hand, three variables (higher age, higher general self-efficacy, and more time spent on independent study) were significantly associated with a higher preference for the teaching type "supporting understanding" (see Table 2). This corresponds well with the results of a recent study, where the same variables (in addition to prior experience from higher education) significantly predicted higher scores on the deep approach scale (Bonsaksen et al., 2017). In this case, the results are also in accordance with theory, suggesting that student characteristics contribute to determine both their approaches to studying as well as their preferences for courses and teaching (hence, creating the association between study approach and preference for teaching). Considering the results together, the notion that students' preferences for teaching can be explained by their sociodemographic, personal, and education-related characteristics is only partly supported from our data.

Higher age indicates more experience, from life in general and sometimes also from prior higher education. Such experience may logically translate into intellectual maturity and productive study habits, such as spending more time on independent study and using a deep and/or strategic study approach. Empirical studies have shown higher age to be associated with better learning outcomes among students (Zeegers, 2001), and among occupational therapy students specifically (Bonsaksen et al., 2017). Higher age and spending more time on independent study have also been associated with higher levels of a deep approach and lower levels of a surface approach to studying (Bonsaksen et al., 2017). Adding to the existing knowledge, the present study indicates that higher age and more independent study are associated with having a stronger preference for the kinds of courses and teaching that presumably are frequently used in higher education institutions. As higher education institutions aim at developing students' understanding and skills for reasoning, and not merely to present them with relevant facts, higher age and more study efforts appear to be resources for the students throughout the education course.

Similarly, higher general self-efficacy was significantly associated with a stronger preference for the teaching type "supporting understanding". This result echoes previous studies providing evidence for relationships between higher self-efficacy and use of productive (deep and/or strategic) study approaches among students (Bonsaksen et al., 2017; Cassidy & Eachus, 2000; Duff, 2004; Maguire, Reynolds, & Delahunt, 2013; Prat-Sala & Redford, 2010). Looking toward motivational theories, self-efficacy has been shown to be closely associated with intrinsic motivation (Walker, Greene, & Mansell, 2006). Therefore, it seems plausible that those students who are intrinsically motivated to gain a more comprehensive understanding of the study content—learning for its own sake, rather than for external reasons—may prefer courses and teaching that fits with this motive. Alternatively, Higgins' regulatory focus theory (Higgins, 1997, 1998) offers "promotion" and "prevention" as concepts that may contribute to explain the association. Students with higher general self-efficacy may be inclined to assume a promotion focus, and therefore prefer to expose themselves to learning situations where they feel stimulated and challenged, rather than cared for and safe. Teaching according to the "supporting understanding" type may indeed foster such feelings of being stimulated and challenged.

4.1. Study limitations and future studies

The cross-sectional study design prevents from establishing causal links between the variables used in the study, and reciprocal interactions between them are plausible – for example, between self-efficacy and preferences for courses and teaching. Sadly, there is no information available about the students' perceptions of the given learning environment. Considering that perceptions of the learning environment influence students' approaches to studying, it is likely that they also influence the preferences students have for different types of courses and teaching. With a view to generalizability, the study is limited by recruiting students from only one profession, from only one study program, and from only one university. Further studies that (1) employ longitudinal designs, that (2) include measures of the learning environment in combination with measures of study approaches and preferences for teaching, and that (3) recruit participants from a broader range of education programs, institutions and countries, may be of particular value.

5. Conclusion

The study aimed to investigate the associations between sociodemographic, personal, and education-related factors, and preferences for courses and teaching among occupational therapy students in Norway. Among the students, higher age, higher general self-efficacy, and spending more time on independent study were associated with having a stronger preference for teaching oriented toward "supporting understanding"—a form of teaching that may be described as more challenging or demanding than the other type, which is oriented toward "transmitting information". Overall, the students preferred the latter teaching type slightly more than the former. No variables were significantly associated with preferring it, indicating that the preference for teaching oriented toward "transmitting information" was evenly distributed across the employed student characteristics.

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Author details
Tore Bonsaksen[1,2]
E-mail: tore.bonsaksen@hioa.no
[1] Faculty of Health Sciences, Department of Occupational Therapy, Prosthetics and Orthotics, Oslo Metropolitan University, Oslo, Norway.
[2] Faculty of Health Studies, VID Specialized University, Sandnes, Norway.

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References

Bonsaksen, T. (2015). Predictors of general self-efficacy and self-esteem in occupational therapy students: A cross-sectional study. *Occupational Therapy in Mental Health, 31*(3), 298–310. doi:10.1080/0164212X.2015.1055536

Bonsaksen, T., Brown, T., Lim, H. B., & Fong, K. (2017). Approaches to studying predict academic performance in undergraduate occupational therapy students: A cross-cultural study. *BMC Medical Education, 17*(76). doi:10.1186/s12909-017-0914-3

Bonsaksen, T., Fagermoen, M. S., & Lerdal, A. (2015). Factors associated with self-esteem in persons with morbid obesity and in persons with chronic obstructive pulmonary disease: A cross-sectional study. *Psychology, Health & Medicine, 20*(4), 431–442. doi:10.1080/13548506.2014.959529

Bonsaksen, T., Kottorp, A., Gay, C., Fagermoen, M. S., & Lerdal, A. (2013). Rasch analysis of the General Self-Efficacy Scale in a sample of persons with morbid obesity. *Health and Quality of Life Outcomes, 11*(1), 202. doi:10.1186/1477-7525-11-202

Bonsaksen, T., Sadeghi, T., & Thørrisen, M. M. (2017). Associations between self-esteem, general self-efficacy, and approaches to studying in occupational therapy students: A cross-sectional study (early online). *Occupational Therapy and Mental Health, 1–16*. doi:10.1080/0164212X.2017.1295006

Bonsaksen, T., & Thørrisen, M. M. (2017). Psychometric properties of two interrelated measures: Conceptions of learning and Preferences for different types of courses and teaching. *Ergoterapeuten, 60*(4), 32–45.

Brown, T., Fong, K., Bonsaksen, T., Murdolo, Y., Cruz-Gonzales, P., Tan, H. L., & Lim, H. B. (2016). Approaches to learning among occupational therapy undergraduate students: A cross-cultural study. *Scandinavian Journal of Occupational Therapy, 24*(4), 299–310. doi:10.1080/11038128.2016.1229811

Cassidy, S., & Eachus, P. (2000). Learning style, academic self-belief systems, self-report student proficiency and academic achievement in higher education. *Educational Psychology, 20*(3), 307–322. doi:10.1080/713663740

Corporation, I. B. M. (2016). *SPSS for Windows, version 24*. Armonk, NY: IBM Corp.

Diseth, Å. (2001). Validation of Norwegian version of the approaches and study skills inventory for students (ASSIST): Application of structural equation modelling. *Scandinavian Journal of Educational Research, 45*(4), 381–394. doi:10.1080/00313830120096789

Diseth, Å. (2007). Approaches to learning, course experience and examination grade among undergraduate psychology students: Testing of mediator effects and construct validity. *Studies in Higher Education, 32*(3), 373–388. doi:10.1080/03075070701346949

Diseth, Å., & Martinsen, Ø. (2003). Approaches to learning, cognitive style, and motives as predictors of academic achievement. *Educational Psychology, 23*(2), 195–207. doi:10.1080/01443410303225

Diseth, Å., Pallesen, S., Brunborg, G. S., & Larsen, S. (2010). Academic achievement among first semester undergraduate psychology students: The role of course experience, effort, motives and learning strategies. *Higher Education, 59*(3), 335–352. doi:10.1007/s10734-009-9251-8

Duff, A. (2004). The revised approaches to studying inventory (RASI) and its use in management education. *Active Learning in Higher Education, 5*(1), 56–72. doi:10.1177/1469787404040461

English, L., Luckett, P., & Mladenovic, R. (2004). Encouraging a deep approach to learning through curriculum design. *Accounting Education, 13*(4), 461–488. doi:10.1080/0963928042000306828

Entwistle, N. (1991). Approaches to learning and perceptions of the learning environment. *Higher Education, 22*(3), 201–204. doi:10.1007/BF00132287

Entwistle, N., McCune, V., & Tait, H. (2006). *ASSIST: Approaches and Study Skills Inventory for Students*. Edinburgh: University of Edinburgh.

Entwistle, N., & Tait, H. (1990). Approaches to learning, evaluations of teaching and preferences for contrasting academic environments. *Higher Education, 19*(2), 169–194. https//doi.org/10.1007/BF00137106

Entwistle, N., Tait, H., & McCune, V. (2000). Patterns of response to an approaches to studying inventory across contrasting groups and contexts. *European Journal of Psychology of Education, 15*(1), 33–48. doi:10.1007/bf03173165

Fayers, P. M., & Machin, D. (2007). *Quality of life. The assessment, analysis, and interpretation of patient-reported outcomes* (2nd ed.). West Sussex: Wiley.

Herrmann, K. J., McCune, V., & Bager-Elsborg, A. (2017). Approaches to learning as predictors of academic achievement: Results from a large scale, multi-level analysis. *Högre Utbildning, 7*(1), 29–42. doi:10.23865/hu.v7.905

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*(12), 1280–1300. doi:10.1037/0003-066X.52.12.1280

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 30, pp. 1–46). New York, NY: Academic Press.

Leganger, A., Kraft, P., & Roysamb, E. (2000). General and task specific self-efficacy in health behaviour research: Conceptualization, measurement and correlates. *Psychology & Health, 15*(1), 51–69. https//doi.org/10.1080/08870440008400288

Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education, 27*(1), 27–52. doi:10.1080/03075070120099359

Maguire, M., Reynolds, A. E., & Delahunt, B. (2013). Self-efficacy in academic reading and writing, authorial identity and learning strategies in first-year students. *The All Ireland Journal of Teaching and Learning in Higher Education, 5*(1), 1111–11117.

Prat-Sala, M., & Redford, P. (2010). The interplay between motivation, self-efficacy, and approaches to studying. *British Journal of Educational Psychology, 80*(2), 283–305. doi:10.1348/000709909X480563

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press. https//doi.org/10.1515/9781400876136

Salamonson, Y., Weaver, R., Chang, S., Koch, J., Bhathal, R., Khoo, C., & Wilson, I. (2013). Learning approaches as predictors of academic performance in first year health and science students. *Nurse Education Today, 33*(7), 729–733. doi:10.1016/j.nedt.2013.01.013

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. 35–37). Winsor: Nfer-Nelson.

Sharp, J. G., Hemmings, B., Kay, R., & Atkin, C. (2017). Academic boredom, approaches to learning and the final-year degree outcomes of undergraduate students (early online). *Journal of Further and Higher Education, 1–23*. doi:10.1080/0309877X.2017.1349883

Streiner, D. L., & Norman, G. R. (2008). *Health measurement scales—A practical guide to their development and use* (4th ed.). Oxford: Oxford University Press. https//doi.org/10.1093/acprof:oso/9780199231881.001.0001

Sun, H., & Richardson, J. T. E. (2016). Students' perceptions of the academic environment and approaches to studying in British postgraduate business education. *Assessment & Evaluation in Higher Education, 41*(3), 384–399. doi:10.1080/02602938.2015.1017755

Tait, H., & Entwistle, N. J. (1996). Identifying students at risk through ineffective study strategies. *Higher Education, 31*(1), 97–116. https//doi.org/10.1007/BF00129109

Tait, H., Entwistle, N. J., & McCune, V. (1998). ASSIST: A reconceptualisation of the Approaches to Studying Inventory. In C. Rust (Ed.), *Improving students as learners* (pp. 262–271). Oxford: Oxford Brookes University.

Tambs, K. (2004). Moderate effects of hearing loss on mental health and subjective well-being: Results from the Nord-Trondelag Hearing Loss Study. *Psychosomatic Medicine, 66*(5), 776–782. https//doi.org/10.1097/01.psy.0000133328.03596.fb

Tambs, K., & Røysamb, E. (2014). Selection of questions to short-form versions of original psychometric instruments in MoBa. *Norsk Epidemiologi, 24*(1–2), 195–201.

Valadas, S. C., Almeida, L. S., & Araujo, A. M. (2016). The mediating effects of approaches to learning in the academic success of first-year college students (early online). *Scandinavian Journal of Educational Research,* 1–14. doi:10.1080/00313831.2016.1188146

Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences, 16*(1), 1–12. doi:10.1016/j.lindif.2005.06.004

Ward, P. J. (2011). Influence of study approaches on academic outcomes during pre-clinical medical education. *Medical Teacher, 33*(12), e651–e662. doi:10.3109/0142155x.2011.610843

Ystgaard, M. (1993). *Sårbar ungdom og sosial støtte* [Vulnerable youth and social support] (Report No. 1/93). Oslo: Center for social networks and health [Senter for sosialt nettverk og helse].

Zeegers, P. (2001). Approaches to learning in science: A longitudinal study. *British Journal of Educational Psychology, 71*(1), 115–132. doi:10.1348/000709901158424

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