Occupational therapy students' preferences for teaching and course design across a three-year undergraduate education program

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Abstract

Purpose – Understanding students' preferences for teaching and course design is important for educators in higher education when planning courses and teaching activities. The purpose of this study was to explore changes in occupational therapy students' preferences for teaching and courses across the three-year study program.

Design/methodology/approach – A total of 263 students participated in a longitudinal study, where preferences were measured with the Approaches and Study Skills Inventory for Students. The data were analyzed with linear mixed effect models for repeated measures.

Findings – The results indicated no significant changes in preferences for courses and teaching over the three-year period. Also, there were no significant differences between the six involved study programs. Preferences for the courses and teaching type "supporting understanding" were associated with higher age and higher study effort. Preferences for the courses and teaching type "transmitting information" were associated with lower age and female gender.

Originality/value – In summary, the findings of this study suggest that preferences for teaching and courses are stable and may be challenging to alter during a three-year undergraduate study program.

Keywords Preferences for teaching and courses, Higher education, Occupational therapy, Teaching, Professional education

Paper type Research paper

Introduction

Students' learning and preferences for teaching in higher education has been a topic of increasing interest for researchers,

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policymakers and educators in recent decades. The increased level of interest has been demonstrated in various fields of research, including social science and business education (Halme *et al.*, 2021) and health professional education programs such as medicine (Davidson, 2011), nursing (Walker *et al.*, 2007) and occupational therapy (Bonsaksen, 2018).

Research on learning environments and learning dynamics emphasizes that learning should be understood contextually, considering the characteristics of students in relation to course design and implementation (De la Fuente *et al.*, 2021). Generating more knowledge on how students learn and interact with learning environments is important for educators to improve the quality of the educational experience. Moreover, it is argued that students' perceptions of teaching and learning environments have a more direct influence on students' learning than the methods used by educators themselves (Entwistle *et al.*, 2003). Therefore, understanding the students' perceptions of teaching and course design can be useful for improving the quality of students' learning. For health professional educators, understanding the dynamics of the learning environment and how these interact with students' preferences for various types of teaching and courses may enable teachers to design courses appropriate to the students' preferences and needs (Biggs, 2012). Generating more knowledge about the types of teaching and courses that promote occupational therapy students' engagement is an important step to address the further development and quality improvement in occupational therapy education.

Recent years have generated a considerable body of knowledge about occupational therapy students' learning processes, approaches to studying and their perception of learning environments (Carstensen *et al.*, 2018; Bonsaksen, 2018; Gramstad *et al.*, 2020; Mørk *et al.*, 2020). Previous studies have indicated that students' preferences for teaching and course design broadly influence academic achievement (Lizzio *et al.*, 2002; Zhang, 2008) and that students' preferences for teaching are connected to their approaches to studying (Entwistle and Tait, 1993; Carstensen *et al.*, 2018). Students' preferences for teaching may vary across subjects in accordance with their own interests (Zhang, 2008). Their perceptions of the learning environment, including their perceptions of teaching and course design, may influence their learning process, approach to studying and satisfaction with the study program (Entwistle, 1991; Mørk *et al.*, 2020; Thygesen *et al.*, 2020).

While some studies have encouraged a transition towards student active teaching methods due to their strong relationship to academic achievement and learning quality (Deslauriers *et al.*, 2019; Schneider and Preckel, 2017), other studies have highlighted challenges with such forms of teaching and course design. For instance, it has been noted that teaching and courses building on principles of active engagement have accumulated considerable degrees of student resistance in higher education contexts (Finelli *et al.*, 2018). Deslauriers and colleagues (2019) suggested that students' reluctance to engage with active teaching approaches, despite evidence of performing better academically than their control-group peers exposed to student-passive teaching styles, was associated with the negative feelings such teaching might evoke (i.e. frustration, confusion, exhaustion). Thus, students' preferences for teaching types are not necessarily in line with existing research on their effectiveness with regards to improving students' knowledge, skills, attitudes and classroom attendance. As a result, students' preferences for types of teaching might be an obstacle in their learning processes.

Previous research has distinguished between two overarching types of preferences for teaching and courses (Entwistle, 1991). The first type of teaching preference is a preference for teaching that facilitates more nuanced and deeper understanding ("supporting understanding"), while the second type is a preference for shallower or less cognitively demanding teaching methods ("transmitting information"). As such, these preferences are concerned with the contents and organization of teaching and courses, as opposed to learning styles, a concept used to indicate the preferred sensory modality involved in the students' absorbing, processing, and retaining information. Halme and co-workers (2021) reported associations between preferences for courses and teaching and study approaches. They suggested that differences in preferences for courses and teaching may reflect differences in students' personal values, and that students' interest in teaching aimed at supporting understanding may be expected in "softer" disciplines such as social sciences. Occupational therapy education may be understood as a discipline between "soft" and "hard" science, where students are exposed to active learning forms throughout their studies. Nonetheless, one study found that occupational therapy students generally preferred the teaching type "transmitting information" over "supporting understanding," and that maturity in form of higher age, higher self-efficacy and more time invested in studying was associated with a preference for more challenging teaching methods ("supporting understanding") (Bonsaksen, 2018). However, we have been unable to locate studies using longitudinal data to examine whether preferences for teaching and course design change over time. Thus, the degree to which preferences for teaching and course design should be considered stable or amenable to change during the course of a higher education program is unknown. Such knowledge may contribute to evidence-based education aligned with the characteristics of students.

Study aim

This study aimed to examine changes in Norwegian occupational therapy students' preferences for types of teaching and courses across the three-year undergraduate education program.

Methods

Design and study context

This longitudinal observational study is part of a larger inquiry regarding the perceived learning environment (Thordardottir *et al.*, 2020; Thygesen *et al.*, 2020), approaches to studying (DaLomba *et al.*, 2020; Gramstad *et al.*, 2020; Mørk *et al.*, 2020; Thørrisen *et al.*, 2020) and academic performance (Bonsaksen *et al.*, 2021) among occupational therapy students in Norway. The study employed data from the students in their first, second and third year of study. The data collections were conducted with one-year intervals at each education program, about midway into each study year.

In Norway, there are six occupational therapy education programs, all of which are three year full time studies. Most of

these programs are explicitly grounded in pedagogical frameworks that may be considered as active learning approaches: e.g. problem-, case- and team-based learning (Gramstad *et al.*, 2020). Learning activities include group work, flipped classroom, traditional lectures, self-studies, seminars, practical skills training and blended learning approaches. All students must complete mandatory practical education in various clinical contexts before completion of their degree. In Norway, the minimum requirement is 30 weeks of practical education. It is a stated goal that the occupational therapy educational programs should facilitate integration of theoretical understanding, practical skills and challenge students' attitudes, preconceptions and critical thinking skills (Ministry of Education and Research, 2019).

Participants, recruitment and response rate

Students from all of these six occupational therapy education programs were invited to participate. A member of the faculty distributed the questionnaires and consent forms to students. From the six education programs, 305 students were eligible to participate. At the first assessment, 187 students participated (61.3% response rate), while 168 (55.1% response rate) and 200 (response rate 65.6%) participated in the second and third years, respectively. In total, 263 students (response rate 86.2%) participated at a minimum of one assessment, and these 263 students were included in the current study sample.

Measurement

Sociodemographic background and education-related variables

Information regarding sociodemographic background (age and gender) and education (education institution and individual study efforts, the latter operationalized as hours spent on independent study during a typical week) was collected as part of the questionnaire.

Preferences for courses and teaching

In this study, the "Preferences for different types of course and teaching" scales (Part C of the Approaches and Study Skills Inventory for Students [ASSIST] assessment battery) was used (Tait *et al.*, 1998), specifically Diseth's (2001) validated Norwegian translation. The "Preferences for different types of course and teaching" consists of eight statements concerning teaching methods, course content, syllabus and forms of assessment. The students are asked to rate on a scale from 1 to 5 how much they like the content of the different statements, 1 indicating "strongly dislike," and 5 indicating "likes very much." Four of the statements are designed to reflect a preference for teaching that corresponds with deep understanding, called "supporting understanding"; e.g. "Lecturers who encourage us to think for ourselves and show us how they themselves think." The other four statements are designed to reflect a preference for teaching oriented towards surface understanding, "transmitting information"; e.g. "Books which give you definite facts and information which can easily be learned." The measure was psychometrically investigated in a study by Bonsaksen and Thørrisen (2017), in which the proposed two-factor structure was supported by exploratory principal components analysis. In this study, the internal consistency of the two scales (see data analysis section) was also found to be satisfactory, although in the lower range.

Data analysis

All data were entered into the computer program IBM SPSS version 26 (IBM Corporation, 2019). Descriptive analysis on all variables was performed, using means (M), standard deviations (SD), frequencies and percentages as appropriate. Factor analysis was used to confirm the two-factor structure reported by Bonsaksen and Thørrisen (2017). The two latent factors accounted for a cumulative 47.2% of the data variance, and all items loaded onto the two factors (factor loadings ranging between 0.55 and 0.80) as theoretically expected. Internal consistencies were α = 0.61 (mean inter-item correlation 0.32) for the scale "transmitting information," and α = 0.54 (mean inter-item correlation 0.23) for the scale "supporting understanding." While Cronbach's alpha values were lower than the commonly recommended threshold of 0.70 (Streiner, 2003), the internal consistency of scales with very few items (such as the scales used in this study) may preferably be examined with the mean inter-item correlation coefficient (Briggs and Cheek, 1986). Coefficients of 0.20 or higher indicate a satisfactory level of internal consistency between the scale items.

Missing data during the follow-up period were managed using linear mixed models (LMM) for repeated measures. In contrast to ANOVA approaches for repeated measures analysis, LMM can be used to estimate trajectories despite missing scores on single occasions. Thus, the possibility of selection bias is reduced by using all available data. The linear mixed effect models were used to examine the trajectory of each of the two preference scales and whether overall scores differed between the education institutions. An unstructured covariance matrix was used to model dependencies within individuals. In addition to time and education institution, possible confounders (age, gender and study efforts) were entered as fixed effects. Estimates of fixed effects are presented as regression coefficients with 95% confidence intervals.

Ethics

The Norwegian Center for Research Data gave their approval for collecting, storing and using the data (project no. 55875). The students were informed that completion of the questionnaires was voluntary, that their responses would be treated in confidence and that there would be no negative consequences from opting not to participate in the study. All participants provided written informed consent.

Results

Participants

The 263 participants represented six different education institutions in Norway, located in Oslo (n = 69, 26.2% of the total sample), Bergen (n = 41, 15.6%), Trondheim (n = 64, 24.3%), Sandnes (n = 35, 13.3%), Tromsø (n = 28, 10.6%) and Gjøvik (n = 26, 9.9%). They were 207 (78.7%) women and 55 (20.9%) men (one participant did not report gender). In the sample, the mean age at admission was 23.0 years (SD = 4.9 years) and the number of hours spent on independent study during a typical week (averaged across the three study years) was 8.7 h (SD = 6.0 h).

Preferences for teaching and courses

Tests of fixed effects on the scale "supporting understanding" are displayed in Table 1. No significant change was found across the three years of study, and there were no overall differences between education institutions. Higher age (b = 0.08, 95% CI: 0.02–0.14, $p < 0.01$) and higher study effort (b = 0.08, 95% CI: 0.03–0.12, $p < 0.01$) were associated with overall higher scores on this scale. Overall, the students mean scores on "supporting understanding" were 15.1 (95% CI: 14.7–15.5) in the first year, 15.2 (95% CI: 14.8–15.7) in the second year and 15.4 (95% CI: 14.9–15.8) in the third year.

Tests of fixed effects on the scale "transmitting information" are displayed in Table 2. No significant change was found across time, and there were no overall differences between education institutions. Lower age (b = −0.10, 95% CI: −0.17 to −0.03, $p < 0.01$) and female gender (b = −0.81, 95% CI: −1.55 to −0.08, $p < 0.05$) were associated with higher scores on this scale. Overall, the students mean scores on "transmitting information" were 17.2 (95% CI: 16.8–17.6) in the first year, 16.9 (95% CI: 16.4–17.3) in the second year and 17.0 (95% CI: 16.3–17.7) in the third year.

Discussion

The aim of this study was to examine changes in Norwegian occupational therapy students' preferences for types of teaching and courses across the three-year undergraduate education program. The results showed that preferences for teaching and courses remained unchanged for occupational therapy students' progressing from the first to the third year of study. In addition, there were no differences between the study programs. Higher age and higher study effort were significantly associated with higher scores on "supporting understanding," while lower age and female gender were associated with higher scores on "transmitting information." The results are discussed in relation to existing research.

Table 1 Scores on the "supporting understanding" scale: tests of fixed effects

Parameter	*F*	*p*
Intercept	286.63	<0.001
Age	7.13	<0.01
Sex	1.65	0.20
Study efforts	9.62	<0.01
Education institution	1.70	0.14
Time	0.72	0.49

Notes: "Study efforts" is time spent on independent studying during a typical week. "Education institution" refers to differences in scale scores between the education institutions. "Time" refers to change in scale scores according to time of measurement

Table 2 Scores on the "transmitting information" scale: tests of fixed effects

Parameter	*F*	*p*
Intercept	538.30	<0.001
Age	8.70	<0.01
Sex	4.81	<0.05
Study efforts	2.81	0.10
Education institution	0.92	0.47
Time	1.38	0.25

Notes: "Study efforts" is time spent on independent studying during a typical week. "Education institution" refers to differences in scale scores between the education institutions. "Time" refers to change in scale scores according to time of measurement

There were no changes in the students' preferences for teaching. The results indicate that students' preferences for teaching and courses are stable over time, at least over the relatively short duration of the three-year occupational therapy education program. As noted in other studies, habits and perceptions about teaching and learning may primarily be shaped during the formative years in high school (Reid *et al.*, 2012). Therefore, due to their early formation and habituation, such preferences may be difficult to change, despite the encouragement to increasingly use student-active teaching methods in higher education in many countries (Deslauriers *et al.*, 2019). However, there are exceptions. In contrast to the results of our study, Davidson (2011) reported changes in students' preferences for teaching over a three-year period, despite initial student resistance in an undergraduate medical course. Similar results have also been reported among physiotherapy students (Kell and Van Deursen, 2002). Yet, it is difficult to compare findings and interpret differences in results due to differences in context, course design, measurement methods and sample composition. While more longitudinal research on the development of students' teaching preferences is needed, researchers should also carefully design studies to overcome the existing problems with interpretation. This may include a thorough description of context and course design, the use of large and heterogeneous samples and the consistent use of appropriate measures.

Compared to their counterparts, older students and students spending more time on independent study had a stronger preference for the teaching type "supporting understanding." These findings replicate and substantiate the findings of a previous study, also demonstrating associations between higher age and more time spent on independent studying and higher ratings on the "supporting understanding" scale (Bonsaksen, 2018). Older students' preferences for this type of teaching could give them a double advantage in health-care education. First, they might find the courses more engaging and aligned to their preference toward deep study strategies (Salamonson *et al.*, 2013; Bonsaksen *et al.*, 2017). Second, their motivation for studying can be reinforced by their perception of the teaching in the course, stimulating their personal understanding. From earlier studies, it has been noted that willingness to invest time in studying is associated with aspects of motivation, and motivation is recognized as a critical factor for effective learning (Deb and Gilmore, 2018). Thus, differences in students' preferences for teaching and courses may broadly align with differences in study motivation.

Female and younger students had a stronger preference for the teaching type "transmitting information." These students' preference toward teaching forms oriented toward providing clear answers and the "teacher-as-expert" model of teaching may concur with the learning environments they were

accustomed to in high school. Thus, their preferences may have been solidified before transitioning to higher education. Another possible explanation may be connected to the stress young students experience when transitioning into higher education. These students have less life experience, often transition directly from high school and may experience significant stress as they struggle to adapt to the demands of studying at the university. Higher levels of stress may reduce the ability or willingness to engage in complex problem-solving and may be one reason for preferring seemingly less complex teaching methods, such as lecturing. This explanation may be particularly relevant for young female students, constituting a larger proportion of those studying occupational therapy (Carstensen *et al.*, 2018).

Implications

Developing high-quality learning environments is a key focus area in higher education and connects to how research on teaching and learning in higher education is used in real-life contexts. Ideally, courses are designed and aligned to scaffold optimal meaningful and robust learning (Biggs, 2012). Occupational therapy education programs often emphasize student-active teaching and learning models, such as problem-, team- and case-based learning (Gramstad *et al.*, 2020). With this in mind, the stability of occupational therapy students' preferences for teaching and course design suggests that occupational therapy educators should consider a few issues when developing course design and teaching methods.

The first implication is that educators may need to be careful and avoid thinking they can alter students' preferences for teaching, as these preferences appear to be relatively stable over time. However, this does not mean that educators should refrain from communicating expectations frequently and clearly or focusing on course design alignment. Our findings may in particular suggest a need to have an awareness of younger and female students' needs, perceptions and preferences, as these students may be more inclined to favor types of teaching and course design that depart from the current emphasis on student-active teaching methods. Understanding the learners' perspective is important. Educators should seek ways to scaffold students' development positively and independently of their preferences for teaching and course design so that they can meet the cognitive demands of higher education.

One way of supporting students who struggle to adapt is to focus on clear and frequent communication in the ways learning is framed and facilitated in day-to-day education practice, as this has been found to improve students' behavioral responses to student-active teaching forms (Finelli *et al.*, 2018). Such framing might normalize typical reactions, such as frustration and discomfort, which some students experience in the classroom. While it is possible that such efforts can reduce stress levels, their potential farther-reaching impact on students' preferences for teaching, is uncertain. Moreover, educators can also explain the relevance of learning activities for professional work-life contexts (Halme *et al.*, 2021).

Study limitations

The study is based on the use of self-report questionnaires only. Thus, the results show the students' responses to the fixed questionnaire format. With that in mind, the students' thoughts, perspectives and explanations remain unknown. Future research may include qualitative inquiry as part of the methods used to assess preferences for teaching.

The scale consistency measures (Cronbach's α) were lower than usually considered acceptable. However, a low number of items on scales, as was the case in this study, is commonly associated with low Cronbach's α estimates (Streiner, 2003). In view of the short scales, the acceptable mean inter-item correlations provide evidence of their internal consistency (Briggs and Cheek, 1986).

The sample was collected from all the six occupational therapy programs in Norway, but the response rate varied between the different programs. Thus, some education programs have more weight and contribute more to the results than other programs with less student participation. Occupational therapy education programs, and the profession as a whole, are dominated by females. Despite this, the gender proportions in this study closely mirror the proportions found in other studies of occupational therapy students (Bonsaksen *et al.*, 2016).

Conclusion

This study aimed to examine changes in Norwegian occupational therapy students' preferences for types of teaching and courses across the three-year undergraduate education program. No changes were found for either type of preference. The result indicates that, in a purely observational context, preferences for teaching among occupational therapy students appear to be established at enrolment and that changes should not be expected within the three-year timeframe of the undergraduate education program.

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Data availability

The data used to support the findings of this study are available from the corresponding author upon reasonable request.

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