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## Occupational Therapy Students' Self-Efficacy for Therapeutic Use of Self: Development and Associated Factors

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## Abstract

Occupational therapy students need to develop self-efficacy for therapeutic use of self in practice. This longitudinal study examined Norwegian occupational therapy students' self-efficacy for therapeutic use of self over a 16-month period and investigated predictors of their end-point self-efficacy. One hundred and eleven students from two universities completed a self-efficacy questionnaire related to the use of self after a workshop, and at 3-month, 10-month, and 16-month follow-up. The students' self-efficacy development was analyzed with linear mixed effect models, while factors associated with self-efficacy were investigated with linear regressions. The students from both universities showed a linear increase in self-efficacy for therapeutic mode use ( $p < 0.001$ ), recognizing clients' interpersonal characteristics ( $p < 0.001$ ), and managing interpersonal events ( $p < 0.001$ ). However, for the students from University 1 the largest increase occurred in an early phase, whereas for the students from University 2 the largest increase occurred in a late phase. Only baseline scores were associated with the end-point measure at 16-month follow-up. The study indicates that students' self-efficacy for therapeutic use of self increased during the follow-up period and adds to the knowledge about occupational therapy students' self-efficacy development related to understanding and managing client-therapist interactions.

## Keywords

Intentional relationship model, longitudinal study, self-efficacy, therapeutic use of self

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## Occupational Therapy Students' Self-Efficacy for Therapeutic Use of Self: Development and Associated Factors

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### ABSTRACT

Occupational therapy students need to develop self-efficacy for therapeutic use of self in practice. This longitudinal study examined Norwegian occupational therapy students' self-efficacy for therapeutic use of self over a 16-month period and investigated predictors of their end-point self-efficacy. One hundred and eleven students from two universities completed a self-efficacy questionnaire related to the use of self after a workshop, and at 3-month, 10-month, and 16-month follow-up. The students' self-efficacy development was analyzed with linear mixed effect models, while factors associated with self-efficacy were investigated with linear regressions. The students from both universities showed a linear increase in self-efficacy for therapeutic mode use ( $p < 0.001$ ), recognizing clients' interpersonal characteristics ( $p < 0.001$ ), and managing interpersonal events ( $p < 0.001$ ). However, for the students from University 1 the largest increase occurred in an early phase, whereas for the students from University 2 the largest increase occurred in a late phase. Only baseline scores were associated with the end-point measure at 16-month follow-up. The study indicates that students' self-efficacy for therapeutic use of self increased during the follow-up period and adds to the knowledge about occupational therapy students' self-efficacy development related to understanding and managing client-therapist interactions.

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## **INTRODUCTION**

Positive relationships with clients are considered vital for therapeutic outcomes and clients' satisfaction (Palmadottir, 2003; Taylor, 2008). Developing interpersonal skills that can promote such relationships is therefore of importance for healthcare students. In occupational therapy, substantial emphasis in education is placed on teaching and practicing therapeutic use of self, which was defined by Punwar and Peloquin (2000) as a "practitioner's planned use of his or her personality, insights, perceptions and judgements as part of the therapeutic process" (p. 285). This definition was also included in the Occupational Therapy Practice Framework (American Occupational Therapy Association [AOTA], 2014) to serve as guideline for occupational therapy practitioners. With the heightened focus on occupational engagement in the field as well as the emphasis on client-centered approaches, the principles of therapeutic use of self play a critical role in clinical reasoning.

Peloquin (2002) found that clients desire more than simply technical competence from therapists; clients value the caring perspective, which is shown by therapists who truly listen to and learn from clients' experiences. In addition, Palmadottir (2003) indicated the client-therapist relationship was one of the major aspects that influenced clients' perception of occupational therapy outcomes. In a similar vein, Bressington, Steward, Beer, and MacInnes (2011) investigated forty-four service users inside forensic secure settings. Results indicated that clients' satisfaction with forensic services was strongly associated with their experience of the therapeutic relationship with their therapists, and with the social atmosphere of the ward. Findings emphasized the importance of forming and maintaining effective therapeutic relations (Bressington et al., 2011).

Although the importance of the therapeutic relationship has been emphasized for several decades, a study revealed that half of 568 occupational therapists disclosed that they did not receive adequate training in this issue in school (Taylor, Lee, Kielhofner, & Ketkar, 2009). In another study, Lloyd and Maas (1991) indicated that clinical supervisors appeared to be significantly more invested in promoting student therapists' demonstration of assertiveness and self-confidence than in developing students' abilities to interact with clients in a warm and empathetic manner. This may suggest that while some skills relevant for establishing therapeutic relationships are widely practiced among students in placement, other skills may not receive enough attention. Furthermore, students may be inclined to focus their time and energy on the more concrete and frequently graded issues (Davidson, 2011). As therapeutic use of self can be hard to teach and grade, this may result in students being likely to undervalue the skills and concepts of therapeutic use of self, as previously reported (Davidson, 2011).

Students in health professions may have a weak professional identity and even experience burn-out if therapeutic interaction is neglected in the curricula (Csörsz, Molnar, & Csabai, 2011; Dahlin & Runeson, 2007). Even though more schools have started to cover topics related to therapeutic use of self, and students have been shown to be able to clearly articulate appropriate strategies when encountering interpersonal issues, students have found it difficult to put these concepts and knowledge into practice (Peloquin & Davidson, 1993). Hence, the processes that take place between

learning the concepts of therapeutic use of self and applying them in clinical practice appear to require further research.

Self-efficacy is the self-belief a person has about his or her effectiveness in using personal abilities to achieve desired outcomes (Bandura, 1997). Thus, self-efficacy plays a part in determining people's choices and behaviors, and conversely, it is partly determined by people's own actions. According to Bandura (1997), people need self-efficacy to pursue challenging tasks, and their self-efficacy will increase or decrease partly as a result of their successes and failures in performing tasks. Within the Intentional Relationship Model (IRM; Taylor, 2008), therapists play the main role to make the interactions therapeutic and beneficial to clients. Therefore, therapists' self-efficacy regarding their therapeutic use of self is critical.

According to the IRM (Taylor, 2008), effective therapeutic use of self involves three steps. First, clients may display different interpersonal behaviors when experiencing stressful circumstances, such as those experienced by clients seeking or undergoing rehabilitation. Therefore, therapists should identify clients' interpersonal characteristics, which include "client emotions, behaviors, and reactions that occur during interactions" (Taylor, 2008, p. 99). Second, therapists should pay full attention to interpersonal events unfolding during the therapy process. These events are naturally occurring and emotionally charged, such as clients expressing strong emotion in relation to their disabilities, or showing resistance or reluctance to participate in the therapy process. If handled appropriately, these events may lead to positive outcomes in terms of improved client satisfaction and fulfillment as well as improved intimacy with therapists. Third, therapists should develop a capacity to choose a single mode, or a sequence of modes, that most fit a client's interpersonal needs (Taylor, 2008). A therapeutic mode can be viewed as a specific communication style of relating to a client. There are six modes (i.e. advocating, collaborating, empathizing, encouraging, instructing, and problem-solving) identified by the IRM. Therapists should be aware of their preferred mode and seek to apply a wider range of modes in a flexible manner to meet clients' needs in any given situation.

Recent studies from Norway invited occupational therapy students in two universities to participate in IRM workshops. In Norway, occupational therapy education is a three-year bachelor's degree program. The short-term results showed that the students increased their self-efficacy for applying the therapeutic relationship in client-therapist interactions (Hussain, Carstensen, Yazdani, Ellingham, & Bonsaksen, 2018; Schwank, Carstensen, Yazdani, & Bonsaksen, 2018). However, the two previous longitudinal studies did not include assessments that went beyond the 10-month follow-up after the IRM workshops. Whether the students were able to sustain their initial increases in the longer term is therefore unknown. Addressing this specific knowledge gap, our study aimed to examine the development of occupational therapy students' self-efficacy for therapeutic use of self during a 16-month follow-up period. In addition, in view of previous results indicating that student characteristics may affect short-term changes (Hussain et al., 2018), the study investigated factors associated with the students' self-efficacy scores at the 16-month follow-up.

## METHODS

### Design

The study used a longitudinal observational design. An introductory IRM workshop was provided for the participants at each of the two universities. The baseline measurement was performed approximately two weeks after the workshop; then, the follow-up measurements were placed within a two-week margin at the 3-month, 10-month and 16-month timeframe after the baseline measurement. A project representative from each of the universities informed the participants about the study and procedures, face to face in the classroom and in the form of a notification on the students' digital learning platform, and subsequently invited the students to participate. Follow-up participation was requested only verbally, face to face in the classroom. All questionnaires were completed by paper and pen.

### Participants

The students were invited to participate in the study provided they were second-year students in one of the two undergraduate occupational therapy education programs in Norway. No exclusion criteria were used. Following informed consent, one hundred and eleven students opted to participate, and the demographics of participants are described in Table 1. The mean age of the students was 24.5 years ( $SD = 6.0$  years). Female students ( $n = 88, 79.3\%$ ) were in majority, and nearly half of the participants had experience from higher education before enrollment in the occupational therapy program ( $n = 55, 49.5\%$ ). The students from University 1 were older, compared to the students from University 2 ( $p < 0.01$ ). There were no missing responses at baseline (first measurement occasion), while there were 11, 10, and 23 missing responses at the second, third and fourth measurement timepoints, respectively. We do not have data concerned with participants' reasons for non-participation at follow-ups.

Table 1

#### Sample Characteristics at Baseline ( $n = 111$ )

Variables	All ( $n = 111$ )	University 1 ( $n = 47$ )	University 2 ( $n = 64$ )	$p$
Age [M (SD)]				
Years of age	24.5 (6.0)	26.6 (7.9)	22.9 (3.3)	< 0.01
Gender [n (%)]				
Male	23 (20.7)	10 (43.5)	13 (56.5)	0.90
Female	88 (79.3)	37 (42.0)	51 (58.0)	
Prior higher education [n (%)]				
Yes	55 (49.5)	24 (43.6)	31 (56.4)	0.79
No	56 (50.5)	23 (41.1)	33 (58.9)	

Note. Group differences analyzed with independent  $t$ -test (age) and Chi-Square test (gender and prior higher education). M=Mean; SD=Standard Deviation.

### IRM Workshops

The content and organization of the workshops have been described previously in more detail (Hussain et al., 2018). At both universities, the workshops were conducted in the classroom. Their duration differed between the education programs, as the workshop in University 1 lasted three hours, while the workshop in University 2 lasted six hours. The pedagogy of the two workshops differed slightly. Provided the longer timeframe for the workshop, the students in University 2 were provided more in-depth teacher introductions and longer sessions of student discussion following teacher demonstrations. However, both included a theoretical introduction to the IRM model, including explanations of its main concepts. Similarly, both workshops included teacher demonstrations, student role-plays, and a concluding plenary discussion. In both universities, the students were encouraged to use the IRM concepts as a framework for thinking about and practicing the therapeutic use of self throughout the course. In addition, the students in University 2 repeated materials used in the IRM workshop in later sessions. Such systematic repetition of workshop materials was not performed with the students in University 1.

### Measures

The *self-efficacy for therapeutic use of self* questionnaire was developed by Yazdani and Tune (2016), based on Taylor's (2008) original model. There are three parts embedded to measure self-efficacy for different aspects of therapeutic use of self. In Part I (six items), the *self-efficacy for therapeutic mode use* scale (N-SETMU; Bonsaksen & Carstensen, 2018), respondents rate their level of confidence that they have the required skills to use each of the therapeutic modes appropriately. It has single factor structure and good internal consistency. Good correspondence has been shown between the abstract concepts and a set of items where the concepts had been operationalized into behaviors (Ritter, Thørrisen, Yazdani, & Bonsaksen, 2017). In Part II (12 items), the *self-efficacy for recognizing interpersonal characteristics* scale (N-SERIC; Ritter, Yazdani, Carstensen, Thørrisen, & Bonsaksen, 2018), respondents rate their level of confidence that they have the required skills to recognize a client's interpersonal characteristics in therapeutic encounters. It possesses a one-factor structure with high internal consistency. In Part III (11 items), the *self-efficacy for managing interpersonal events* scale (N-SEMIE; Bonsaksen, Yazdani, Ellingham, & Carstensen, 2018), respondents rate their level of confidence that they have the required skills to manage interpersonal events that inevitably occur in therapeutic encounters. It also has a one-factor structure with high internal consistency between items. Each item in each of the three parts is rated with a 10-point rating scale, in which 1 represents the lowest self-efficacy and 10 represents the highest self-efficacy. The minimum total scores for the three parts are 6, 12 and 11 respectively, and the maximum total scores are 60, 120 and 110, respectively.

In addition to the three-part questionnaire, the participants provided information about age (in years), gender, and higher education experience prior to enrollment in the current program (yes/no). All data were collected by self-report.

### Data Analysis

All statistical analyses were performed with the IBM SPSS for Windows software, version 24 (IBM Corporation, 2016). Differences between participants at the two universities were examined with  $\chi^2$ -test (gender and prior higher education) and with independent  $t$ -test (age). Missing data and data loss during the follow-up periods were managed using linear mixed models (LMM) for repeated measures. Unlike the traditional ANOVA approaches for repeated measures, LMM allows for estimating trajectories despite missing scores, as long as the participant has valid scores at a minimum of two measurement occasions. These models also use all available data to estimate possible within-subject dependencies. No imputation of missing data is necessary, such that all of the 111 study participants were included in the longitudinal analysis. Using all available data limits possible selection bias, which would occur if only completers were included. Thus, linear mixed effect models were used to assess the development of each of the three self-efficacy outcome measures, and to assess whether the pattern of development differed by university. Dependencies within individuals were modeled using unstructured covariance matrix. In addition to time and university, possible confounders (age, gender and prior higher education) were entered as fixed effects. The results were presented as estimates of regression coefficients with 95 % confidence intervals (CI).

Linear regression analyses were used to identify factors independently associated with self-efficacy scores at the 16-month follow-up. Independent variables were first entered separately into single regression analyses: baseline outcome measure score, university, age, gender, and prior higher education. In the eventual case of several variables being significantly associated with the outcome, multivariate regression analyses were performed. Effect sizes were reported as standardized beta values ( $\beta$ ). The level of statistical significance was set at  $\alpha < 0.05$  and all tests were two-tailed.

### Ethics

The study was conducted according to ethical guidelines for research (World Medical Association, 2013). The participants were informed about the aims and procedures of the study, and written consent was provided from all participants. Study approval was received from the Norwegian Centre for Research Data (project no. 49433).

### RESULTS

Table 2 and Figure 1 display the results from the analysis of predictors of N-SETMU, which measured participants' self-efficacy for therapeutic mode use. The interaction term (university  $\times$  time) was not statistically significant ( $F[3, 99] = 1.98, p = 0.12$ ). After removing the interaction term, the time effect was statistically significant ( $F[3, 99] = 57.47, p < 0.001$ ), indicating a linear increase in N-SETMU over time. In addition, the students from University 1 had, on average, higher scores than the students from University 2 ( $F[1, 106] = 4.60, p = 0.03$ ).

Table 3 and Figure 2 display the results from the analysis of predictors of N-SERIC scores, which measured participants' self-efficacy of recognizing clients' interpersonal



characteristics. Similar with the previous analysis, the interaction term (university  $\times$  time) was not statistically significant ( $F[3, 98] = 2.62, p = 0.06$ ). Having the interaction term removed, the time effect was statistically significant ( $F[3, 98] = 44.55, p < 0.001$ ), thus indicating a linearly increasing development of N-SERIC over time. On average, the students from University 1 displayed higher scores than the students from University 2 ( $F[1, 106] = 5.22, p = 0.02$ ).

Table 2

Fixed Effect Estimates for Models of the Predictors of N-SETMU

Parameter	B	95 % CI	$p$
Age (lower is ref)	0.10	-0.06 – 0.26	0.21
Gender (female is ref)	-0.80	-3.01 – 1.40	0.47
Education (prior higher education is ref)	1.19	-0.64 – 3.03	0.20
University (University 2 is ref)	2.02	0.15 – 3.89	0.03
Time 1 (Time 4 is ref)	-9.09	-10.48 – -7.70	< 0.001
Time 2 (Time 4 is ref)	-5.02	-6.47 – -3.56	< 0.001
Time 3 (Time 4 is ref)	-3.20	-4.42 – -1.98	< 0.001

Note. Effect sizes are unadjusted beta (B) weights, with corresponding 95 % confidence intervals (CI) and significance values ( $p$ ). Ref: reference.

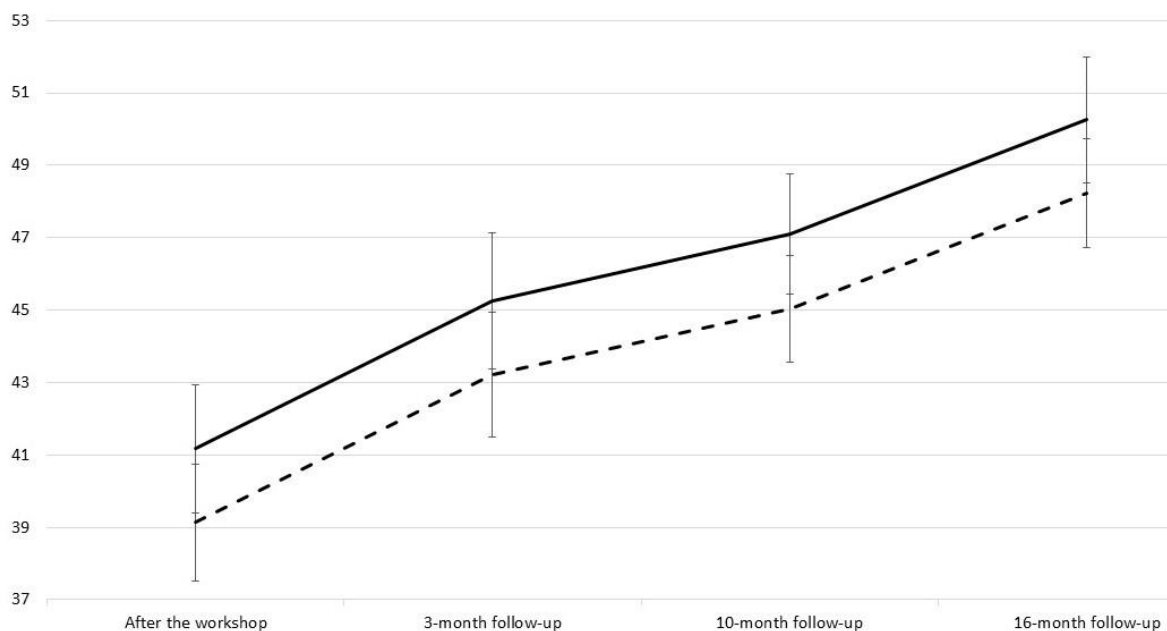


Figure 1. The course of self-efficacy for therapeutic mode use (N-SETMU).

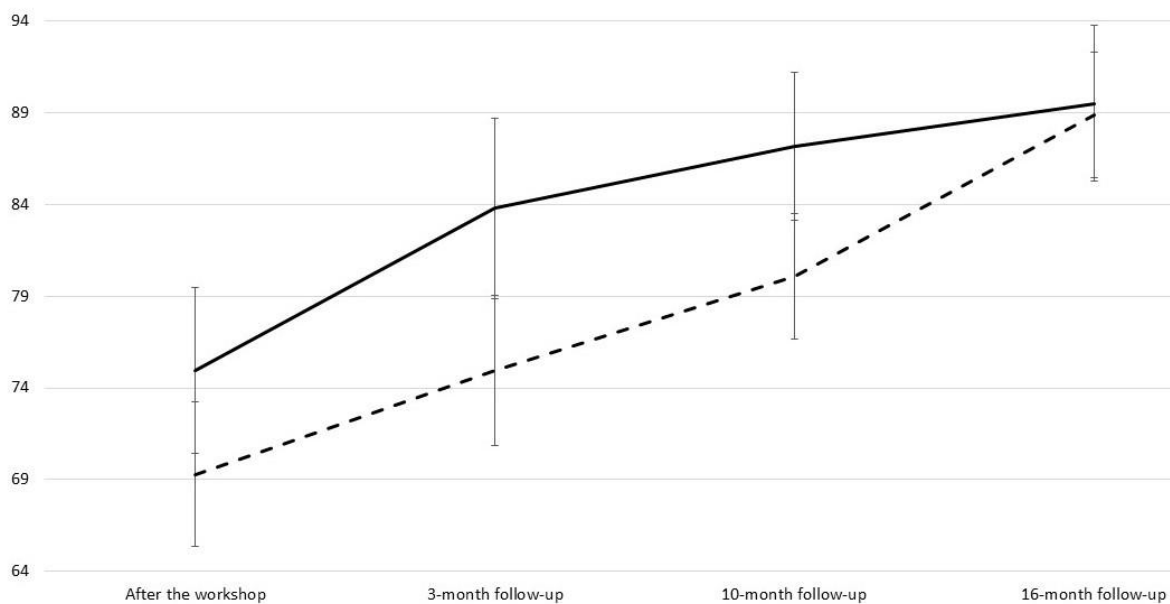
Note. The figure shows mean scores for students at the two universities adjusted for age. The solid line represents University 1, and the dotted line represents University 2. Score range is 6-60, and error bars are calculated as  $SE \times 1.96$ . The students from both universities showed a linear increase in scores over time.

Table 3

*Fixed Effect Estimates for Models of the Predictors of N-SERIC*

Parameter	B	95 % CI	<i>p</i>
Age (lower is ref)	0.21	-0.14 – 0.56	0.25
Gender (female is ref)	-3.10	-7.89 – 1.70	0.20
Education (prior higher education is ref)	3.13	-0.85 – 7.12	0.12
University (University 2 is ref)	4.71	0.62 – 8.79	0.02
Time 1 (Time 4 is ref)	-17.88	-21.02 – -14.74	< 0.001
Time 2 (Time 4 is ref)	-10.98	-14.23 – -7.73	< 0.001
Time 3 (Time 4 is ref)	-6.49	-9.25 – -3.73	< 0.001

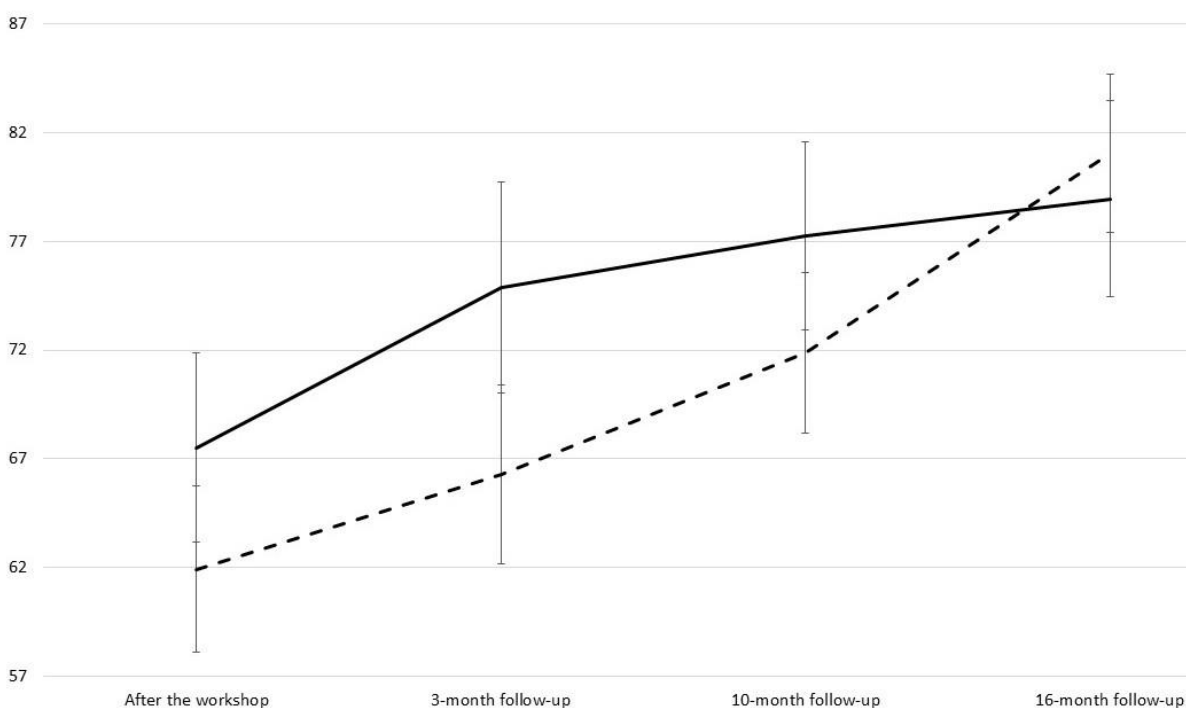
*Note.* Effect sizes are unadjusted beta (B) weights, with corresponding 95 % confidence intervals (CI) and significance values (*p*). Ref: reference.



*Figure 2.* The course of self-efficacy for recognizing interpersonal characteristics (N-SERIC.)

*Note.* The figure shows mean scores for students at the two universities adjusted for age. The solid line represents University 1, and the dotted line represents University 2. Score range is 12-120, and error bars are calculated as  $SE \times 1.96$ . The students from both universities showed a linear increase in scores over time.

Using the N-SEMIE as the outcome to measure participants' self-efficacy for managing interpersonal events, the interaction term (university  $\times$  time) was statistically significant ( $F[3, 98] = 4.99, p < 0.01$ ). As a result, predictors of N-SEMIE scores were analyzed separately for the two universities. Figure 3 and Table 4 display the results of these analyses. For the students from University 1, there was a significant increase from the baseline measurement to the 16-month follow-up ( $p < 0.001$ ). Most of the increase occurred during the time between the first two assessment points, i.e. between baseline and the 3-month follow-up. The subsequent increase, occurring between 3-month and 16-month follow-up, was not statistically significant. For the students from University 2, the scores at 16-month follow-up were significantly higher than the scores at all the other assessment points ( $p < 0.001$ ). For these students from University 2, most of the increase occurred between the 10-month and the 16-month follow-up.



*Figure 3.* The course of self-efficacy for managing interpersonal events (N-SEMIE).

*Note.* The figure shows mean scores for students at the two universities adjusted for age. The solid line represents University 1, and the dotted line represents University 2. Score range is 11-110, and error bars are calculated as  $SE \times 1.96$ . The students from both universities showed a linear increase in scores. The students from University 1 had most of the increase in an early phase, whereas the students from University 2 had most of the increase towards the end of the follow-up period.

Table 4

*Fixed Effect Estimates for Models of the Predictors of N-SEMIE*

Parameter	University 1			University 2		
	B	95 % CI	p	B	95 % CI	p
Age (lower is ref)	0.23	-0.27 – 0.74	0.36	0.19	-0.61 – 0.98	0.64
Gender (female is ref)	-5.53	-14.54 – 3.48	0.22	1.41	-4.92 – 7.75	0.66
Education (prior higher education is ref)	5.84	-2.16 – 13.85	0.15	2.83	-2.20 – 7.87	0.27
Time 1 (Time 4 is ref)	-11.14	-16.35 – -5.94	< 0.001	-19.12	-22.37 – -15.87	< 0.001
Time 2 (Time 4 is ref)	-3.78	-8.30 – 0.74	0.10	-14.71	-18.17 – -11.25	< 0.001
Time 3 (Time 4 is ref)	-1.34	-6.72 – 4.04	0.62	-9.09	-12.07 – -6.12	< 0.001

*Note.* Effect sizes are unadjusted beta (B) weights, with corresponding 95 % confidence intervals (CI) and significance values (*p*). Two separate models were constructed for predictors of N-SEMIE scores due to the statistically significant interaction university × time. Ref: reference.

Finally, we examined whether any of the independent variables (i.e. age, gender, prior higher education, university, baseline scores) was independently associated with the student's self-efficacy for therapeutic use of self at the 16-month follow-up. The baseline level of the N-SETMU was significantly associated with the scores at 16-month follow-up ( $\beta = 0.38$ ,  $p < 0.001$ ). Baseline levels of N-SERIC ( $\beta = 0.35$ ,  $p = 0.001$ ) and N-SEMIE ( $\beta = 0.47$ ,  $p < 0.001$ ) were similarly associated with the respective scale scores at 16-month follow-up. Age, gender, prior higher education or university were not associated with any of the outcome scores at the 16-month follow-up.

## DISCUSSION

Using a longitudinal research design, the current study examined the self-efficacy development of occupational therapy students from two universities in Norway. The results showed that, after attending an IRM workshop and being encouraged to continue using the IRM as a framework to establish relationships with clients, the students' increased self-efficacy for therapeutic use of self was sustained over the 16-month follow-up period.

The purpose of teaching therapeutic use of self in the occupational therapy education programs is to provide students with an experimental base for being able to establish rapport with clients and colleagues (Taylor, 2008). Moreover, its purpose is to increase students' confidence in dealing with a wide variety of interpersonal issues – or even conflicts – in clinical practice situations (Lloyd & Maas, 1991). The current study indicates that the students were able to sustain their confidence in applying the derived techniques in a variety of practice situations over the follow-up period. In addition, it appears that the students were provided with a balanced repertoire of conceptual knowledge, clinical skills and relational strategies for serving as well-integrated therapists. This is an important consideration for occupational therapy and other health professional education programs, because students may have excellent technical skills and knowledge, but these assets may not be well utilized if the students have difficulty applying the techniques of therapeutic use of self (i.e. adopting the appropriate therapeutic mode, recognizing the client's interpersonal characteristics, and managing interpersonal events occurring in the therapeutic relationship). To become a competent health professional in practice, one needs to be prepared to be both personal and professional (Peloquin & Davidson, 1993), and to integrate the two aspects of the self (Yazdani, 2014). Applying an appropriate therapeutic use of self with clients is an important issue that each student will ultimately face in the real world.

The study implies that occupational therapy students can be expected to increase their self-efficacy for therapeutic use of self across their time in education. Their pattern of development, however, may depend on a range of factors, including the contents and organization of the curriculum, the workshops provided by the instructors, and – perhaps most importantly – the students' own clinical fieldwork experience, which was substantial during the follow-up period in this study. According to Bandura (1997), self-efficacy can increase as a result from mastery experiences (e.g., the student deals effectively with an interpersonal challenge), verbal persuasion (e.g., positive reinforcement by the supervisor), social modeling (e.g., the supervisor demonstrates effectively how he or she deals with a situation) and internally experienced affective and physiological states (e.g., the student feels good about his or her experience). Optimally, the practice placement experience serves to increase students' self-efficacy through all of these mechanisms. This also implies that occupational therapy students without any IRM training might exhibit a similar continuing increase in self-efficacy for therapeutic use of self because they undertook extended periods of fieldwork placements.

Emphasizing therapeutic use of self in subsequent sessions throughout the education program may help sustain and further increase students' self-efficacy. In addition, the study implies that students tend to increase their self-efficacy for therapeutic use of self regardless of their age, gender, university, or previous experience from higher education. Thus, we did not identify any risk factors that may indicate a poorer development. Students with lower scores at baseline may achieve self-efficacy increases similar to the increase among those with higher baseline scores.

In this study, we did not assess the participants' actual abilities to use therapeutic use of self in practice. Instead, we wanted to learn about the students' self-perceptions and the developmental pathways of students' confidence related to using the IRM conceptual model. According to the Model of Human Occupation (Taylor, 2017), self-efficacy does not need to be articulated into words; while it is something felt and believed internally, it translates and influences externally observable behaviors. Augmenting the results from two previous studies (Hussain et al., 2018; Schwank et al., 2018), which found increased self-efficacy in all three areas at 3-month and 10-month follow-up, respectively, this study supported the long-term sustainability of such self-efficacy beliefs up until 16-month follow-up. This indicates that the students continue to believe in their own abilities, with the support and encouragement by academic and clinical supervisors.

Between the two universities, we found that students from University 1 largely increased their self-efficacy in an early phase, whereas students from University 2 increased their self-efficacy somewhat more slowly and more towards the end of the follow-up period. While probing about the differences between two universities, we found that the students in University 1 had 20 weeks of practice placement during the early phase subsequent to the IRM workshop, while the students in University 2 only had 12 weeks of placement in the same period. Assuming that the practice placement was important for the students' self-efficacy development, this difference may explain some of the differences between the two groups of students. Moreover, although students from both universities were encouraged to use IRM as a framework throughout the course, only the instructor in University 2 repeated some of the materials used in the IRM workshop in later sessions. This was not done in University 1, and it is therefore possible that the 'booster sessions' may have helped to refresh the students' knowledge and at the same time help them to further improve their self-efficacy. Previous research has suggested that 'booster sessions' may be a beneficial addition to health promotion interventions for persons with chronic illnesses, among which initial increases in self-efficacy have been shown to be short-lived (Bonsaksen, Fagermoen, & Lerdal, 2014). Therefore, occupational therapy clinicians and educators can consider providing 'booster sessions' of those important content areas periodically to help maintain the students' self-efficacy.

Finally, the regression analyses showed that the students' demographic variables (i.e. age, gender, university and higher education experience) did not have associations with the outcomes, instead, only the baseline measures can be used to predict outcomes at the 16-month follow-up. This indicates a degree of autocorrelation over time – the students who had higher initial scores were inclined to continue to have higher scores by the end of the study period. However, higher age did not continue to be associated with higher self-efficacy for therapeutic use of self, which is inconsistent with the results from the three-month follow-up (Hussain et al., 2018). Thus, it appeared that the increase in self-efficacy was more significant among the older students at earlier phases, but it evened out between the participants during the longer follow-up period.

### Strengths and Limitations

The longitudinal design, the sophisticated analytic methods and the use of participants from two different universities are strengths of the current study. On the other hand, there was a certain level of attrition during the course of the study, resulting in some missing responses at the follow-up measurements. However, we consider the level of attrition to be relatively minor, representing no more than 21% of the original sample (as seen at the last measurement), and in the other two instances less than 10%. In addition, using the linear mixed models analysis allowed us to estimate trajectories for all participants despite occasional missing responses. This is known to be a better strategy for avoiding skewed results, compared to using data from completers only. The measurements used to assess the students' self-efficacy were carefully developed and confirmed with satisfactory psychometric properties (Bonsaksen & Carstensen, 2018; Bonsaksen et al., 2018; Ritter et al., 2018). However, the participants were relatively few in numbers, and they were recruited by convenience. Importantly, due to the observational design, there was no control group, and the workshops provided in the two universities were not identical. Hence, the effectiveness of IRM workshops for supporting students' self-efficacy over time cannot be concluded from this study. The sample also represents occupational therapy students from undergraduate programs from one country only. In addition, uncontrolled contextual factors may have had different impacts on the students at the two sites during the follow-up period. Such factors include diverse clinical fieldwork environments and a great variety of clients' conditions encountered by the students. This lack of knowledge limits our ability to explain the detected developmental patterns in the two groups of students. For several reasons, one should be careful about generalizing from the study results. In addition, it should be noted that even when students' self-efficacy is generally improved throughout the course of follow-up, students may take very individual developmental pathways, but such individual pathways were not assessed in the current study. Also, students' self-efficacy in therapeutic use of self might not necessarily represent their actual competence or performance of therapeutic use of self. Therefore, future studies may investigate students' self-efficacy in relation to their clinical supervisors' evaluations of performance for comparison.

### CONCLUSION

The current study has provided evidence to support that occupational therapy students may increase their self-efficacy for therapeutic use of self over a 16-month follow-up period. To improve students' therapeutic skills and overall competence, continuing booster sessions might be helpful when applying the IRM model in clinical practice situations. With improved self-efficacy for the therapeutic use of self among students, positive client-therapist relationships and successful therapy outcomes may be achieved.

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