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Original Article

A Retrospective Study of the Online Self-Regulated Learning Skills of Occupational Therapy Students Enrolled in a Full Online Curriculum at the University of Santo Tomas amidst the COVID-19 Pandemic

Paolo Pimentel[1], Nikka Karla Santos[1], Maielle Jen Capuli[1], Pamela Eloise Gonzaga[1], Erin Jenica Aquino[1], Jared Collado[1], Marion Lucero[1], Diane Stephanie Yap[1]

[1]Department of Occupational Therapy, College of Rehabilitation Sciences University of Santo Tomas, Manila, NCR, Philippines

Correspondence should be addressed to: Maielle Jen Capuli[1]; maiellejen.capuli.crs@ust.edu.ph

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Abstract

Background: The pandemic brought permanent changes in education in terms of set-up and delivery. In the Philippines, most universities switched to online learning to provide educational continuity to their students. Without direct supervision from instructors, higher educational level learners bear greater responsibility for their learning behaviors, emphasizing the need to employ online self-regulated learning (OSRL) skills, which are goal setting, environment structuring, time management, help-seeking, self-evaluation, and metacognition. **Objectives**: This study examined the OSRL skills of occupational therapy (OT) students enrolled in a full online curriculum at the University of Santo Tomas (UST) during the academic year (A.Y.) 2020-2021. It also describes the differences between students' OSRL skills and their demographic characteristics—sex, age, year level, and student status. **Methods:** The study employed a cross-sectional records review of the 2021 Student Life Survey, which was deployed through Google Forms to a total of 205 respondents. Responses from the Online Self-Regulated Questionnaire were extracted and analyzed through descriptive and inferential statistics in SPSS version 27, using the Mann-Whitney U Test and Kruskal-Wallis Test with a significance level set at 0.050. **Results:** Data analysis showed that UST OT students reported average to high levels of online self-regulated learning, with the highest SRL mean score in environmental structuring and goal setting. The students' online self-regulated learning in goal setting is statistically significant to sex (p= 0.021) and age (p= 0.036). Additionally, year levels have a significant difference in task strategies (p= 0.042) and time management (p= 0.006). **Conclusion:** OSRL skills vary depending on the students' contexts and learning environment. They are independent of the students' demographic characteristics. These findings could inform stakeholders and researchers about students' OSRL levels, which can help in providing pedagogical strategies that will enhance students' self-regulated learning in online education.

Key Words*: online self-regulated learning, online self-regulated learning skills, occupational therapy students*

INTRODUCTION

The pandemic brought permanent changes in education in terms of set-up and delivery. In the Philippines, most universities switched to online learning to provide educational continuity to their students.[1] Despite its advantages regarding flexibility and safety, online learning imposes challenges on students. It puts greater responsibility on students' learning behavior due to the decreased direct supervision from instructors.[2,3] In online learning, students exercise more autonomy in establishing their learning objectives and in monitoring their progress more independently.[4,5] Such abilities strongly relate to the concept of self-regulated learning.

Self-regulated learning (SRL) is an active and constructive process necessary for acquiring and managing one's knowledge and skills. In an academic setting, it directly affects the student's achievement and performance. SRL enables learners to direct their own learning experience by managing their emotions, thoughts, and behaviors.[6] SRL has six dimensions: goal setting,

environment structuring, time management, help-seeking, self-evaluation, and metacognition.[7] Students who actively employ SRL skills manage their learning progress through cognitive and metacognitive strategies, such as knowledge structuring and memorization, planning, and monitoring, to achieve their academic goals.[8] Furthermore, online SRL (OSRL) is a vital predictor of academic achievement in online settings.[9] Students who have a high level of self-regulated learning have better academic performance[10] and perceive greater satisfaction in learning compared to their peers with poor SRL skills.[11,12] Hence, there is a need for educational systems to ensure that students can develop SRL across academic settings, including online learning environments.[13]

Students' demographics, such as age, sex, and year level, influence learning. They are important learning indicators that must be contextualized because learning varies from student to student. Numerous studies explored the correlations between SRL traits and sex; however, the results were inconsistent. Studies revealed that the self-regulated skill levels of university students taking programming language lessons [14] and computer courses[15] did not show significant differences according to sex. In contrast, findings reported by Li showed that females in open online courses used SRL skills more than males.[16] There is also a lack of studies that strongly correlate online self-regulated learning to age and year level. In some studies, there were no significant differences in the OSRL between age groups.[17,18] However, other findings reported that SRL levels of school-aged students, specifically goal setting and planning, declined with age.[19] Additionally, there is a lack of consistency on the impact of year level on SRL across the literature, with some authors reporting no significant difference with SRL,[20] while others cited a decline of SRL as students' year levels rose.[17] Comparing these demographic factors is essential for developing successful strategies to promote self-regulation that fits the student's needs. Reviewing the influences of demographic characteristics on different learning modes is crucial as university student populations continue to diversify.[21]

Despite the growing knowledge of SRL in Western countries, SRL in Southeast Asia is still underexplored.[22] Moreover, no research literature related to occupational therapy (OT) or rehabilitation science programs exists. Databases regarding OSRL skills in a full online curriculum can assist educational institutions in the Philippines in developing pedagogical strategies that maximize students' academic performance. Because of this, this study aims to examine the OSRL skills of undergraduate occupational therapy (OT) students enrolled in a full online curriculum at the University of Santo Tomas (UST) in Manila, Philippines, during the academic year (A.Y.) 2020-2021. It also aims to describe the differences between students' OSRL skills corresponding to their demographic characteristics (e.g., sex, age, year level, and student status).

METHODS

Ethical Considerations. The study abides by the principles of the Declaration of Helsinki, the Good Clinical Practice Guidelines of the Philippine Health Research Ethics Board, and the Data Privacy Act of 2012. For the utilization of the 2021 Student Life Survey as a database, the researchers acquired permission and approval from the chairperson of the UST-OT program and the Ethics Review Committee. In compliance with the Data Privacy Act of 2012, the collected data was managed in Google Sheets and stored in a Google Drive folder where access to the documents is only enabled for the researchers, and accounts were secured by Google's two-step verification feature.

Study Design. This retrospective study employed a descriptive cross-sectional records review study design to examine the OSRL skills of undergraduate OT students in UST during A.Y. 2021-2022, to describe their differences, and to assess the prevalence of self-regulated learning behaviors.

Database Description. This study utilized a database generated from the 2021 Student Life Survey of the OT program at UST.[23] The purpose of the survey was to understand the different factors around OT students' performance during the pandemic who were fully taking online

courses from October to November 2021. The database contains data from OT students enrolled at the UST during the first term of A.Y. 2021-2022, including students enrolled at all year levels from first to fifth years across age groups, genders, curriculum (i.e., old, new), academic load (i.e., full-time, part-time), and cohort (i.e., regular, irregular).

The Student Life Survey was first made available to the participants whose data were entered into the database in October 2021 via an online survey that lasted 2-4 weeks. Students consented to participate and allowed the use of their de-identified personal information upon completion of the survey form. The online survey was administered using Google Forms, and the survey form included several sections, including participant's characteristics and the Online Self-Regulated Questionnaire.[23]

Instruments. The Online Self-Regulated Learning Questionnaire (OSLQ), a 24-item self-report tool with a Likert-type response scale, was administered to assess respondent's abilities in 6 subscales, including goal setting, environment structuring, task methods, time management, help-seeking, and self-evaluation. [24] Higher scores on this measure reflect students' improved ability to self-regulate their online learning, and the scale has high levels of validity and reliability.[12]

The internal consistency of the test items was also assessed using Cronbach's alpha with a result of 0.75. The instrument was sufficiently reliable to measure each of the constructs, as reliability values of 0.70 or more are acceptable when employed in the context of scientific research.[25]

Data Gathering Procedures Data extraction from the database was conducted from September 2022 to October 2022. The OT Department's data privacy officer shared the data with the researchers after the UST College of Rehabilitation Sciences Ethics Review Committee gave its clearance. To maintain data security, the data were kept in a spreadsheet that was only accessible to the researchers. The data extracted include demographic information such as age, sex, year level, student status (regular and irregular students), and the OSLQ scores of the participants. The extracted data was then stored in an encrypted and password-protected drive, and local storage was only accessible to the primary investigators.

The inclusion criteria of the original survey included the first to fifth-year OT students enrolled in UST and had taken an online course during the first semester of A.Y. 2021-2022. A census approach to sampling was conducted to select responses of participants in the original survey for inclusion in the current retrospective study. Out of the 205 total data sets from respondents of the 2021 survey, only those records whose data directly fit the sampling criteria were used in the final data analysis.

The extracted data sets were screened twice. The first screening addressed the completeness of the respondents' responses, while the second screening looked into the OSRL scoring guidelines.

Data Analysis. The OSRL scores and demographic data (such as sex, age, year level, and student status) were analyzed using descriptive and inferential statistics in SPSS version 27. Responses to the demographic questionnaire were analyzed through the computation of measures of central tendency (i.e., mean) and variability (i.e., standard deviation). Furthermore, this study employed non-parametric statistical tests as the data were not distributed normally, and the tool uses a Likert scale for variable measures. The OSRL scores with demographic factors with two groups (such as sex and student status) were analyzed using the Mann-Whitney U test, and those with three or more groups (such as age and year level) were analyzed using the Kruskal-Wallis test. A significance level of 0.050 was set, with the p-value indicating a significant result. A p-value lower than the significance level ($p <= 0.050$) indicates a statistically significant difference between each OSRL component to the demographic characteristic.

RESULTS

The study extracted 205 data sets from the 2021 Student Life Survey, and the summary of the respondent's demographic characteristics is shown in Table 1. Most of the respondents were

females (81.5%), aged 20 to 21 (55.1%), in their third year of OT program at the time of the survey (30.2%), and enrolled as regular students (93.2%).

Table 1. Summary of the Demographic Characteristics of Respondents

Parameter	Number of Students	Percentage of Students
Sex		
Male	38	18.53%
Female	167	81.46%
Age		
18-19	42	20.49%
20-21	113	55.12%
22-23	45	21.95%
24-25	5	2.44%
Year Level		
1st Year	18	8.78%
2nd Year	46	22.44%
3rd Year	62	30.24%
4th Year	52	25.37%
5th Year	27	13.17%
Student Status		
Regular Students	191	93.17%
Irregular Students	14	6.83%

Online Self-Regulated Learning of UST-OT Students. The online self-regulated learning scores of OT students were derived from the six OSLQ components, namely, goal setting, environment structure, task strategies, time management, help-seeking, and self-evaluation.[24] Table 2 presents the mean scores and standard deviation for each OSLQ component. Scores ranged from 0 to 5 and were interpreted using a scale with 0.49 increments starting from 1.00 (1.00-1.49 is very low,1.50-2.49 is low, 2.50-3.49 is average, 3.50-4.49 is high, 4.50-5.00 is very high). [20]

Goal Setting. The mean scores in goal setting decline with age and year level, with ages 18-19 and first years receiving the highest mean scores and ages 24-25 and fifth years with the lowest mean scores. Younger students, ages 18–19 (*M*=3.79, *SD*=0.93) and 20–21 (*M*=3.77, *SD*=0.77), showed higher scores than those of older students, ages 22–23 (*M*=3.44, *SD*=0.79) and 24–25 (*M*=3.00, *SD*=1.23), who showed average scores. First through fourth-year students' scores were also high, while students in their fifth year showed an average score (*M*=3.370, *SD*=0.84). Female students had higher scores (*M*=3.75, *SD*=0.84) compared to male students (*M*=3.45, *SD*=0.76), showing average scores. Both regular (*M*=3.70, *SD*=0.84) and irregular students (*M*=3.50, *SD*=0.65) reported high scores in goal setting, with regular students showing slightly higher mean scores than irregular students.

Environment Structuring. Environmental structuring scores were high for all participants across all sexes, age groups, and year levels. Female students (*M*=3.77, *SD*=0.879) have higher mean scores than male students (*M*=3.56, *SD*=1.10). Regular students rated their environment structuring as high (*M*=3.759, *SD*=0.91), while irregular students reported this component as average (*M*=3.39, *SD*=1.02).

Task Strategies. The participants showed average scores in task strategies across all sexes, age groups, year levels, and student status. Females (*M*=3.12, *SD*=0.81) showed higher scores than males (*M*=2.86, *SD*= 0.85). The mean scores in task strategies also decline with age, with the 24-25 (*M*=2.50, *SD*=1.00) age group having the lowest scores. Fourth years (*M*=3.22, *SD*=0.81) showed the highest mean scores across year levels. Regular students (*M*=3.07, *SD*=0.81) showed higher mean scores than irregular students (*M*=3.04, *SD*=0.89). Overall, the mean scores in task strategies are comparatively lower than the other OSRL skills.

Time Management. All scores in both sexes, age groups, and student status have an average level of time management. Female students (*M*=3.33, *SD*=0.08) showed higher mean scores compared to male students (*M*=3.08, *SD*=0.17). The mean scores in time management decline with age, with second-year to fifth-year students reporting average scores and first-year students reporting high scores (*M*=3.67, *SD*=0.84). In terms of year level, the mean scores also declined as the year progressed higher, with regular students (*M*=3.29, *SD*=1.00) showing a slightly higher mean than irregular students (*M*=3.14, *SD*=1.10).

Help-Seeking. Across all age groups, the general mean scores on help-seeking are average, except for students ages 24-25 who reported a low-level help-seeking score (*M*=2.10, *SD*= 0.89). Consequently, male students (*M*=3.22, *SD*= 0.89) showed higher mean scores than female students (*M*=2.93, *SD*= 0.94). Regular students

(*M*=2.99, *SD*=0.95) showed slightly higher mean scores than irregular students (*M*=2.90, *SD*=0.74). Similar to task strategies, the mean scores for help-seeking are lower as compared to the mean scores of other OSRL skills.

Table 2. Mean scores and standard deviation of OSRL characteristics

	Goal Setting	Environment Structure	Task Strategies	Time Management	Help-seeking	Self-evaluation
Sex						
Male	3.450 ± 0.760	3.592 ± 1.1019	2.855 ± 0.846	3.080 ± 0.174	3.224 ± 0.8906	3.566 ± 0.6385
Female	3.740 ± 0.837	3.766 ± 0.8795	3.117 ± 0.805	3.330 ± 0.077	2.928 ± 0.9351	3.410 ± 0.8454
Age						
18-19	3.790 ± 0.925	3.679 ± 0.9552	3.190 ± 0.781	3.430 ± 0.181	3.083 ± 1.0872	3.643 ± 0.9058
20-21	3.770 ± 0.768	3.850 ± 0.9183	3.111 ± 0.852	3.360 ± 0.086	2.938 ± 0.9067	3.442 ± 0.7955
22-23	3.440 ± 0.785	3.511 ± 0.8153	2.911 ± 0.709	3.000 ± 0.149	3.100 ± 0.8020	3.278 ± 0.7654
24-25	3.000 ± 1.225	3.600 ± 1.5166	2.500 ± 1.00	2.800 ± 0.583	2.100 ± 0.8944	3.100 ± 0.4183
Year Level						
1st Year	3.940 ± 0.802	3.694 ± 1.0166	3.361 ± 0.7823	3.670 ± 0.840	2.861 ± 0.802	3.722 ± 0.7901
2nd Year	3.830 ± 1.102	3.793 ± 0.9694	3.087 ± 0.9736	3.330 ± 1.194	2.967 ± 1.102	3.478 ± 1.0486
3rd Year	3.710 ± 0.637	3.734 ± 0.8575	2.984 ± 0.7297	3.440 ± 0.880	2.984 ± 0.637	3.468 ± 0.6065
4th Year	3.600 ± 0.721	3.817 ± 0.8746	3.221 ± 0.8069	3.230 ± 1.002	3.087 ± 0.721	3.442 ± 0.8023
5th Year	3.370 ± 0.839	3.500 ± 1.0470	2.741 ± 0.6559	2.700 ± 0.869	2.889 ± 0.839	3.111 ± 0.7511
Student Status						
Regular	3.700 ± 0.841	3.759 ± 0.9146	3.071 ± 0.8137	3.290 ± 1.004	2.990 ± 0.9458	3.432 ± 0.8291
Irregular	3.500 ± 0.650	3.393 ± 1.0224	3.036 ± 0.8872	3.140 ± 1.099	2.893 ± 0.7385	3.536 ± 0.5358

Note: 1.00-1.49 Very Low,1.50-2.49 Low, 2.50-3.49 Average, 3.50-4.49 High, 4.50-5.00 Very High

Table 3. Test summary (p-values) of demographic characteristics to OSRL characteristics

	Goal Setting	Environment Structure	Task Strategies	Time Management	Help-seeking	Self-evaluation
Sex	0.021	0.457	0.139	0.184	0.059	0.456
Age	0.036	0.064	0.118	0.078	0.234	0.061
Year level	0.053	0.812	0.042	0.006	0.862	0.070
Student Status	0.284	0.191	0.954	0.587	0.493	0.837

Self-evaluation. The mean scores in self-evaluation decline with age and year level, with ages 18-19 and first years receiving the highest mean scores and ages 24-25 and fifth years with the lowest mean scores. Students reported average scores across all age groups except students with the youngest age group of 18-19 (*M*=3.64, *SD*=0.91), showing high scores. Students from the second to fifth year have average scores, while first-year students have high scores. Males (*M*=3.57, *SD*=0.64) have higher scores compared to females (*M*=3.41, *SD*=0.85), showing an average score. Similarly, irregular students (*M*=3.54, *SD*=0.54) have a higher score compared to regular students (*M*=3.43, *SD*=0.83), showing an average score. Table 3 summarizes the p-values of the OSRL

characteristics of students according to their demographics.

Sex Differences in OSRL. As indicated in Table 3, there is a statistically significant difference in the online self-regulated learning scores of students in terms of age in the area of goal setting (p=0.456). However, there were no significant differences in terms of environment structure (p=0.457), task strategies (p=0.139), time management (p=0.184), help-seeking (p=0.059), and self-evaluation (p=0.456). These findings suggest that the participants' sex contributes to their perceptions of self-regulated online learning for the goal-setting component.

Age Differences in OSRL. There is a significant difference between age and online self-regulated learning in goal setting (p=0.036) at a 0.05 level of significance. However, there was no significant difference in terms of environment structure (p=0.064), task strategies (p=0.118), time management (p=0.078), help-seeking (p=0.234), and self-evaluation (p=0.061). These findings suggest that age influences the students' online self-regulated learning but solely for the goal-setting component.

Year Level Differences in OSRL. Year level is a statistically significant contributor to the students' perception of online self-regulated learning in task strategies (p=0.042) and time management (p=0.006). However, there is no significant difference in the level of online self-regulated learning in relation to goal setting (p=0.053), environment structure (p=0.812), help-seeking (p=0.862), and self-evaluation (p=0.070).

Student Status Differences in OSRL. No statistically significant difference was seen in the student's status across all the OSLQ components: goal setting (p= 0.284), environment structure (p=0.191), task strategies (p=0.954), time management (p=0.587), help-seeking (p=0.493) and self-evaluation (p=0.837) at 0.05 level of significance. These results indicate that student status did not influence the students' levels of online self-regulated learning.

DISCUSSION

This study intends to describe the online self-regulating skills of UST OT students during the COVID-19 pandemic. According to the study's findings, students show high levels of environmental structuring, average to high levels of goal setting, and average levels of task methods, time management, help-seeking, and self-evaluation. Moreover, there is a significant difference in the students' sex and age in relation to goal setting. Additionally, year level has a significant difference in task strategies and time management. However, there were no consistent and definitive differences in terms of the relationship between OSRL and the students' demographic characteristics.

Goal Setting

The UST OT students scored their goal-setting with an average to high rating; therefore, they are proactive in determining educational goals and planning, sequencing, and scheduling activities. [26] Other studies revealed higher participant ratings in terms of the goal-setting component, [22,27] which is consistent with the study's findings. In the context of online education, several studies have demonstrated a strong link between goal-setting and successful student outcomes. [28] It is associated with improvement in academic performance, [29] willingness of students to learn, [30] and self-efficacy. [30] Provision of a thorough course outline, explanation of the course evaluation measures, and the anticipated time commitments for course activities are some supports that can be given to improve the students' perception in this component. Students may be more equipped to create short-term goals and plan their next steps to reach those goals if they are aware of what is expected of them for these tasks.[27]

Environment Structuring

Environment structure has the highest mean scores from UST OT students among the self-regulated learning constructs. This result implies that the students can select the best physical setting for learning. [26] This finding shares similar results with other studies. [18] It can be attributed to the less rigid structure of asynchronous online education, where the students can identify the

most productive study locations that are both pleasant and conducive to their learning.[32] Students can participate in online education from any location, and they can customize the physical space to suit their needs.

Task Strategies

This online self-regulation component refers to taking notes, reviewing the course materials, creating discussion forum questions in advance, and completing additional problems in online courses to ensure mastery of the content. [26] Task strategy is directly correlated with a person's willingness, interest, and commitment to learn. [30] The mean scores for task strategies are comparatively lower than the other self-regulated learning constructs. Similarly, Chumbley also noted low ratings for task strategies among agriculture students taking online classes. He explains that the students have not yet acquired task strategies because of the limited experience they have in an online learning environment. [32] Another factor contributing to the low mean score is the strong correlation between "task strategies" and resistance to web-based instruction, which implies that in online learning environments, students cannot develop task strategies. [33] Meanwhile, feedback has been shown to have a positive influence on task strategies, specifically, scaffolding feedback, verification feedback, and teacher praise, which can be adopted as support in an online context to improve students' task strategies. [34]

Time Management

UST OT students showed average time management, except for first years, who demonstrated high levels. This finding means that first-year students tend to participate more in scheduling and planning their time, organizing and creating plans to ensure the completion of learning tasks.[7] This may be due to the student's degree of anticipation and the perception of course workload of first-year students compared to students in higher years. [35] Because higher year-level students have increased workloads, they may not actively participate in time management strategies. Additionally, students in higher year levels are found to use higher cognitive strategies, which means they manage and make more effective use of their time without using overt time management strategies. [36] Time management is a precursor skill for other SRL skills because it enables the creation of time space for other SRL skills to be implemented. Results showed that the UST OT students may not consciously practice their time management skills. In online settings, learning management systems (LMS) have built-in monitoring systems that can help students track their progress. Automated time management enabling systems may be set up by teachers in the LMS to promote the practice of time management to their students. [37]

Help-Seeking

In terms of help-seeking strategies, the oldest age group showed the lowest mean scores. This is in contrast to the mean scores per year level, where the first years showed the lowest. This means that these groups (students aged 24-25 and first years) show decreased abilities to monitor their academic performance. They are less likely to become aware of academic difficulties and less willing to seek a hand from a more knowledgeable individual to overcome them. [38] Surprisingly, UST OT male students showed higher help-seeking scores than their female counterparts. This is in contrast with what the literature suggests that female students showed a higher tendency to employ and display better abilities in using SRL than male students. [39] However, it can also be noted that females have higher emotional intelligence and self-regulation compared to males. Female students are able to manage their moods and emotions better. They are also able to monitor and reflect on their learning more effectively. [40-42] Thus, this may explain the lower scores of UST OT female students where they develop their own strategies by employing other SRL skills such as goal setting, environment structuring, task strategies, and time management to improve their learning, even before seeking help. In online settings where interaction is limited, teachers should take the initiative to reach out to all students and set up a safe online environment that promotes interaction, such as regular check-ins, designating time for consultations, and putting up discussion boards for general queries.

Self-evaluation

Similar to help-seeking strategies, UST OT male students showed higher self-evaluation scores than female students. This means that they demonstrate less ability to assess one's personal effectiveness with respect to a particular learning task.[7] Even though female students generally show better SRL skills than males, they also tend to assess their skills significantly lower than their actual skills. [43] Additionally, the literature suggests that students in higher years, especially those in clinical learning environments (i.e., interns), appear to demonstrate higher levels of self-evaluation and SRL skills in general. [44-45] Advanced learners, or older students in higher year levels, show better metacognition compared to beginner learners. [44] This is in contrast to the results of this study, where UST OT students who are older and in higher years showed the lowest self-evaluation mean scores. Clinical training in higher years may suggest more rigorous processes in terms of learning; thus, SRL skills such as self-evaluation may be hindered because of the lack of flexibility when navigating their learning needs. [46] Experienced learners should be provided with more opportunities to explore their learning needs and practice self-evaluation strategies by themselves. Such independence in learning can reinforce autonomy, which facilitates self-evaluation. [47]

Sex differences in OSRL

The study's findings found that there is a significant difference in goal setting, suggesting that UST OT female students tend to employ goal setting more than male students. Similar studies suggested parallel results, wherein female students were reported to have higher SRL skills than males.[13, 32, 48] Preparatory, performance, and appraisal phases of self-regulation were all areas where females performed better than males.[13] In another study, [49] self-regulation scores of female participants in "planning and determining aims'' were much higher than those of the male participants. This relationship between sex and SRL skills may be attributed to differences in mood management and emotional self-regulation. Female students optimize their performance strategies by effectively managing their time and effort in setting and achieving goals and their ability to pay more attention to their learning and follow their instructors. [13] On the other hand, environmental structuring, task methods, time management, help-seeking, and self-evaluation did not differ significantly in terms of gender. It has similar findings with other research by Wang,[13] stating that there are no gender differences in self-regulated learning or technology self-efficacy. Given the mixed results, further research is required to determine how gender influences self-regulated learning in an online learning environment.

Age Differences in OSRL

In this study, there is a significant difference between the goal-setting skills of OT students and their age. Specifically, younger participants scored higher in goal setting compared to older students. Similar results were found in other studies, where a decrease in SRL skills was reported in goal setting and planning as an individual aged. It is hypothesized that declining levels of learning motivation limit the use of SRL in a school setting.[13] Hence, conscious support through interventions for older students is necessary for universities to enhance students' SRL and academic performance.[50,51]

Year Level Differences in OSRL

Significant differences were noted in task strategies and time management in terms of year levels. There are limited studies that explore the effect of year level on SRL, and the findings are inconsistent. According to some studies, SRL abilities decline as students' year levels increase, and higher year-level students score lower on the OSRL than students in lower year levels.[16,17] In a study by Quorina, [53] stress, worry, hopelessness, and lack of motivation are barriers to implementing SRL for upper year-level students. However, other studies found no connection between OSRL and year level.[20] Further research is necessary to ascertain how year level affects self-regulated learning in an online learning environment, given the contradictory results.

The result of this study is similar to some of the findings of other researchers, but not all. The relationship between demographic variables and online self-regulated learning is unclear, as results are mixed. However, the trends evident in

the results can help the stakeholders of the University of Santo Tomas in creating individualized strategies, based on their demographic profile, that aim to improve the self-regulated learning of their student population. To prepare students to become self-regulated learners, the degree of assistance provided by the school should be considered.[22] Hence, implementation of intervention for task strategies and time management could be implemented primarily for higher year levels, and goal-setting strategies can be integrated into the curriculum to help students, especially males, and older learners, in fostering their self-regulated learning skills.

Implications of the Study

In relation to student success, prior studies revealed that self-regulated learning, particularly in online courses, has a significant value.[38] With the shift of the educational system to online learning because of the pandemic, the findings of this study can become a basis for improvements of students in the online setting, as SRL interventions are effective in supporting students in the effectiveness of their learning experience.[54] It would benefit the stakeholders of academic institutions, as the results of this study would help tailor teaching instructions and more effective learning experiences to meet student's individual needs in improving academic performance.[55] Furthermore, few researches have been done on SRL in Southeast Asia in the context of online learning,[22] and the result of this study can serve as a database for comparison to gain an understanding of the SRL profile of Filipino students.

Limitations of the Study

The study has several limitations, such as the generalizability of the results to other contexts. Results might not reflect the SRL abilities of other professions since the participants were limited to students from the rehabilitation sciences, specifically from the Occupational Therapy degree. Second, as the OSLQ is a tool for self-reporting, the student's perception has a significant impact on the reported levels of SRL skills, which can be affected by factors such as social desirability bias. Furthermore, the tool does not measure if the reported levels of SRL skills reflect the participants' effectiveness in employing these strategies. Lastly, due to the nature of the study design, the obtained results cannot establish what causes the differences in the students' SRL skills. For future studies, it is recommended for it to be replicated with a larger number of participants, and it can be conducted in other educational settings for the generalizability of the results. Other tools related to observations and the acquisition of data regarding participant implementations of SRL subprocesses for learning could be used in future studies. Lastly, studying students' self-regulated learning in a hybrid learning environment will also be important as academic institutions adopt blended learning as the new norm.

CONCLUSION

The result showed that UST OT students enrolled in a full online curriculum during the COVID-19 pandemic reported average to high levels of online self-regulated learning, with the highest SRL mean score found in Environmental Structuring and Goal Setting. Moreover, the secondary analysis of undergraduate OT students' OSRL across key demographic characteristics showed significant differences. The students' sex and age level are statistically significant to the student's perception of online self-regulated learning in Goal Setting. Additionally, year levels have a significant difference in Task Strategies and Time Management. The findings can help educational institutions in providing pedagogical strategies that will enhance students' self-regulated learning if they intend to continue using online learning.

Individual Author's Contributions

P.P., N.K.S., M.J.C., P.E.L.G., E.J.A., J.C., M.L., D.S.Y.; Data acquisition, drafting of manuscript, approval of final version, accountability for all aspects of work.

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Conflicts of interest

The authors of this paper declare no conflicting interest.

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