The Impact Of Learning Disability Diagnosis On College Academic Self-Efficacy And Self-Esteem

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This is for all those who fight to be understood.

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Abstract

Research Aims: The current study strived to investigate the predictive influence of diagnosis of one or more learning disabilities (LD) on levels of academic self-efficacy and self-esteem after accounting for gender identity and levels of educational supports in third level education in Ireland. The study also examined the differences in age of diagnosis between gender identities between participants who are diagnosed with one or more LD diagnosis. Additionally, the differences in levels of academic self-efficacy and self-esteem between participants with and without one or more diagnosed LDs was also studied. **Method:** The sample of 72 participants answered an online questionnaire consisting of demographically questions, The College Academic Self-Efficacy Scale (CASES) and The Rosenburg Self-Esteem Scale (RSES). **Results:** A hierarchical multiple regression showed that LD diagnosis was statistically significant at predicting an additional 5.7% of variance in CASES score (*beta*= .29, *p*=.043) but gender identity and levels of educational supports were not . However, a hierarchal multiple regression was completed with total RSES instead and yielded no statistically significant results. A marginally statistically insignificant difference between the gender identities male and female and LD diagnosis age as seen in an independent T-test (*p*=.056). The results from two independent samples T-tests showed there was statistically significant negative relationship between LD diagnosis and academic self-efficacy (*p*=.011) however, there was no statistically significant difference for self-esteem (*p*=.154). **Conclusion:** This study showed the influence of LD diagnosis on academic self-efficacy. Further research needs to investigate this influence on self-esteem and why diagnosis effects academic self-efficacy.

Keywords: College academic self-efficacy; self-esteem; age of diagnosis; educational supports; learning disabilities; third level education

Literature Review

Learning disabilities (LDs) are directly related to differences in function and structure of the brain which causes effects in ability to "receive, store, process, retrieve or communicate information" (Cortiella and Horowitz, 2014, pg. 3). LDs are more likely to be diagnosed than other disabilities, however, there are still many types of LDs that are more difficult to diagnose than others for example, specific learning disabilities (Lyon et al, 2001 & Benson et al., 2020). However, Lyon and colleagues stated that although LDs are more commonly diagnosed, they are less understood and strongly debated (2001). The example of a type of learning disability is specific learning disabilities, which refers to disordered psychological processes involving general understanding and the use of language which effects listening, speech, reading, writing, spelling, and math ability (Siegel, 1999). This diagnosis is used for dyslexia, perceptual disability, brain injury, developmental aphasia, and minimal brain dysfunction.

Despite the many types of disabilities some researchers still chose to only focus on one diagnosis such as, in Olsson et al. (2016) review of the development of neuropsychiatric problems of children with autism spectrum disorder who were diagnosed before the age of 4.5. However, comparative studies of students who are formally diagnosed with LDs and those with no LD diagnosis have been completed before despite difference between types of LD diagnosis (Quinn et al., 2020; Niazov et al., 2021; Eloranta et al., 2021; Valas, 2001). Researchers have noted that early age of diagnosis is impactful for predicting of remedial successes for children with LDs (sample of 176, average age of 9) which indicated that early diagnosis is pivotal for LDs (Vandenberg & Emery, 2009). Reduced diagnosis of non-observable disabilities combined with differences in severity and symptoms in females and males can lead to academic, social, emotional and behaviour difficulties (Benson et al., 2020 and Grigorenko et al., 2020). When

these are not aided, they can cause reduced functioning and poor social outcomes (Grigorenko et al., 2020) but low social skills caused by LDs is not the only limitation of having a LD (Kavale and Forness, 1996).

Additionally, children's levels of self-esteem increased after their diagnosis of a learning disability (MacMaster et al., 2002). Furthermore, Hammill et al. (1981) discussed that LDs can be accompanied by other conditions such as, emotional disturbances and/or environmental factors, for example cultural differences but they are not a direct result of these. A study found that children with LD are more likely to show issues with attention and hyperactivity, maladaptive behaviour, relational issues with children without LD and emotional complications (Buonomo et al., 2007).

Academic Self-Efficacy

The theorist Bandura purposed that self-efficacy consists of four sources "enactive mastery experience, vicarious experience, physiological and affective states and verbal persuasion" (Hirose et al., 1999). Ahmadi (2020) described academic self-efficacy as an individual's perception of their abilities to "manage their learning behaviour, to master academic material and to fulfil academic expectations" and higher levels of academic self-efficacy have been linked with higher academic performance within English, maths, chemistry, anatomy, and physiology (pg. 1). Self-efficacy influences individuals in many ways including decision making, amount of effort used, length of perseverance when met with a difficulty, resilience, motivation within academic settings, learning and achievement (Hen and Goroshit, 2014). When investigating levels of academic self-efficacy in students with LDs in higher education Niazov and colleagues found that these individuals showed lower levels of academic self-efficacy and higher levels of academic stress in comparison to students with no LD (2021). Willoughby and

Evans found a positive relationship between self-efficacy and self-acceptance of LD diagnosis within their population of university students with LD and/or ADHD diagnosis (2019).

Self-esteem

Many studies about children with LDs have broadened the research in the field to consider more developmental factors such as, Buonomo et al. (2017), examined the effect a child's emotional development had on their views of their own LD. Valas (2001) found a decrease in self-esteem and expectation of academic success and higher levels of helplessness behavioural patterns and depressive symptoms in Norwegian students who are diagnosed in comparison to students with no diagnosis. Although these studies found a link between lower levels of self-esteem and self-reported academic expectations both used samples of children. Due to the age range of these studies, it would be important to re-examine participants who are in young adulthood or older to see the effect of their emotional and wellbeing development. Children with LD are more likely to experience lower levels of self-esteem than their peers without LD, have smaller friendship circles and are sufficiently more likely to drop out of education furthermore adults with LD experience higher levels of unemployment (Vandenburg & Emery, 2009).

Educational Supports and Third Level Education

When investigating the use of educational supports, Abed and Shackelford, (2020) found that students with LDs in third level institutions in Saudi Arabia require educational supports to allow for equal opportunities in education. Some studies to investigate evidence based interventions for students with LDs but many of these are specialised studies with selective subject choice and samples. Such as, the systematic review of 18 studies conducted by Bone et al. (2021) about intervention for students between sixth and twelfth grade to improve learning

algebra. There is a survey of 63,802 American university students that older students who had self-reported LDs encounter more challenges than younger students (McGregor et al., 2016). Students have reported that when entering third level education they did not disclose their LDs to the institution due to fear of being stigmatised by staff, lecturers, and fellow students (Gow et al., 2020).

Furthermore, Johnson et al. (2008) reported that 98% of public institutions in America have students with registered LDs and have the facilities to offer them supports and accommodations. Furthermore, McGregor and colleagues stated that students with LDs in third level education in America that accessed supports received more contact with university staff and experienced less difficulty with their assignments (2016). In contrast to this, a South African study found a discrepancy between supports and accommodation between different LD diagnosis (Gow et al., 2020). Due to this contrast between countries, there is a need for data surrounding access to third level institutional supports in Ireland.

One study found that university students with LD in America showed lower levels of satisfaction with their university experience and experienced bias and impediments to succeeding in their education in spite of this the students still set out similar goals as their peers without LD (McGregor et al., 2016). Furthermore, university graduates described their LD as a motivator for their success rather than a stressor or a negative aspect of their learning experience (Russak & Hellwing, 2019). In a longitudinal study, it was found that students with LD discussed that becoming advocates for themselves in academic setting and knowing their individual strengths and weaknesses due to their LD will help them in their future careers but also being able to voice when they need accommodations and supports due to their LD (Hadley, 2018).

Previous studies on third level students with LDs have used qualitative research such as, Russak and Hellwing, (2019). However, they discussed overlapping of statements and themes and other studies reported mixed responses leading to low generalisability (Russak & Hellwing, 2019 and Hadley, 2018). This study will use quantitative research using questionnaires as suggested by researchers when working with a sample containing individuals with LD diagnosis for examining topics such as self-acceptance in university students with LDs (Willoughby and Evans, 2019). The importance of accessible and comprehendible studies for all participants should be considered especially, when educating and working with individuals who are diagnosed with a LD (Gates and Head, 2019).

Researchers have previously used questionnaire scales such as, *Self-Compassion Scale, College Academic Self-Efficacy Scale, Rosenburg Self-Esteem Scale*, *College Adaptability Scale, Career Decision Self-Efficacy-Short Form,* and the *Brief Symptom Inventory-18* to investigate different hypothesis surrounding topics such as, self-efficacy, self-esteem and mental health and their relationship with LD diagnosis (Neff et al., 2015; Hirose et al., 1999; Thompson et al., 2019). However some researchers noted that to prevent misunderstanding resulting in skewed or incorrect results from participants with LD diagnosis scales may need to be modified such as the *Rosenburg Self-Esteem Scale* (Whelan et al., 2007).

Rationale and Research Aims, Questions and Hypotheses

The scientific rationale of this study is that a large portion of previous studies about learning disabilities have been based in America and/or with sample that are children (McGregor et al., 2016, Johnson et al., 2008, Quinn et al., 2020 & Buonomo et al., 2017). Many studies that have been conducted with students in third level education with learning disabilities have been qualitative research studies but resulted in low generalisability (Russak & Hellwing, 2019 and

Hadley, 2018). Therefore this study will follow the recommendation for use of questionnaire based research while upholding best practices for accessibility in hopes of producing accurate results void of misinterpretation of materials (Willoughby and Evans, 2019; Gates and Head, 2019; Whelan et al., 2007; Marinus et al., 2016; Rello & Baeza-Yates, 2016). Furthermore, there are many studies that only focus on one type of LD diagnosis (Olsson et al., 2016) but also many who include multiple types of LD diagnosis (Quinn et al., 2020; Niazov et al., 2021; Eloranta et al., 2021; Valas, 2001). The current study aims to contribute to the literature surrounding multiple types of LD diagnosis within the sample to acknowledge the spectrum of types of diagnosis.

Previous research has explored both the niche and vast variables and samples for investigating self-esteem and/or academic self-efficacy. Examples of this are: Lejzerowicz and Tomczyk study of self-esteem and identity integration of people with and without physical disabilities (2018), Jacob and colleagues' study of young adults' experiences of stigma and self-esteem who have parents with disabilities (2018), Peleg study which showed lower levels of self-esteem and higher levels of test anxiety for teenage students with LD in comparison to those without (2009) or Ahmadi's study of path analysis of academic self-esteem, self-efficacy and achievement in a sample of high school students (2020). This study wishes to add to the literature surrounding academic self-efficacy and self-esteem in relation to both the differences between third level students with and without diagnosis but also what predictive value for LD diagnosis have on academic self-efficacy and self-esteem alongside other possible predictive variables.

Finally, majority of studies only include male and female as gender identifiers for gender differences (Benson et al., 2020 and Grigorenko et al., 2020) which leaves out people who

identify as non-binary and other gender identities from gender focused comparison. Due to the literature presented, differences in age of diagnosis and receiving supports from third level education are both variables that should be investigated further with a sample in Irish third level education (Benson et al., 2020; Gow et al., 2020; Grigorenko et al., 2020 & Vadenberg & Emery, 2009). Colleges and universities across Ireland offer a variety of supports which is why it is important to factor in accepting and utilising educational supports in this study.

Research Questions

The research questions that were investigated in this study were: 1. After first controlling for *gender identity* and level of *educational supports*, does *learning disability diagnosis* predict *academic self-efficacy* and *self-esteem levels*? 2. Is there a difference in *age of diagnosis* across different *gender identities* within participants with one or more diagnosed learning disabilities? 3. Is there a difference in *levels of academic self- efficacy* and *self-esteem* between *students with and without one or more diagnosed LDs?*

Research Aims

The aims of this study are 1. to investigate the relationship between being *diagnosed with one or more learning disabilities* and *levels of academic self-efficacy* and *self-esteem* while considering *gender identity* and *levels of institutional supports in third level education*. 2. the differences of *age of diagnosis* between *gender identities* within the group of participants who are diagnosed with one or more LD diagnosis and 3. the differences in *levels of academic self-efficacy* and *self-esteem* between participants with and without one or more diagnosed LDs.

Hypotheses

There were five hypothesis examined in this study. Firstly, LD diagnosis could predict variance in an individual's academic self-efficacy levels after accounting for level of educational

supports from third level educational institution and gender identity. Secondly, LD diagnosis could predict variance in an individual's self-esteem levels after accounting for level of educational supports from third level educational institution and gender identity. Thirdly, Gender identity can influence whether an individual is diagnosed with one or more LDs at a younger or older age and the null hypothesis is that there is no statistically significant difference in age of diagnosis between individuals with one or more LD diagnosis. The fourth hypothesis is that there is a positive or negative difference in total CASES scores between individuals with and without one or more LD diagnosis. The null hypothesis is that there will not be a statistically significant difference between the two groups. Finally, there is a positive or negative difference in total RSES scores between participants with and without one or more LD diagnosis. The null hypothesis is that there will be no difference between the two groups.

Method

Participants

The sample contained 72 participants of students from third level educational institutions in Ireland. The age range is 18 to 39 (*M*= 21.59, *SD*= 2.83). Within the sample there was 54 females (75%), 16 males (22.2%), 2 non-binary people (2.8%) and there was no participants who identified as other gender identities. There was 17 of the participants who are with diagnosed learning disabilities (23.6%) and 55 of participants who are not diagnosed with a learning disability (76.4%). The sample were gathered through convenience sampling through social media (Appendix J & K) and speaking to students during their lectures. All participants were informed that participation is voluntary, they had the right to withdraw without penalty at any time and participation is anonymous. The inclusion criteria was that the individual must currently be in third level education in Ireland and aged 18 or over. All participants consented virtually and were informed of how they could ask questions about the study before consenting. Ethical considerations were considered to ensure every participant gave informed consent (NCI, 2017; PSI, 2010). Ethical approval was obtained from the National College of Ireland Ethics Committee.

Measures and Materials

The anonymous questionnaire consists of three questionnaires; a demographic questionnaire, the Rosenburg Self Esteem Scale (RSES) (Rosenburg, 1965) and College Academic Self-Efficacy Scale (CASES) (Owen & Froman, 1988) (see appendix C, E & G) presented to participants using Microsoft Forms. The questionnaire was completed online using Microsoft Forms, therefore each participant had to have access to one electronic device such as a phone, laptop, or iPad with internet access. Using the editing tools available on Microsoft Forms

the researcher implemented best practice for accessibility for all participants by using the sans serif font Segoe UL, large font size, bold and underlining on text and spacing to increase reading comprehension (Marinus et al., 2016; Rello & Baeza-Yates, 2016). There was the option for the questionnaire to be read aloud to participants using reader technology that was available on Microsoft Form and there was an instructional video of how to turn on the reading technology (Appendix I). While conducting this study it is pivotal that the questionnaire used is accessible to the sample to be ethically respectful towards the participants (Tuffrey-Wijne et al., 2008).

Demographic Questionnaire

A questionnaire created for this study which consists of nine questions (see appendix C). The chosen questions are phrased as to uphold participants' anonymity. The questions consisted of asking for their age, if they are currently a third level student in Ireland, their gender identity, year of education, if they are diagnosed with one or more learning disabilities and had they ever received institutional educational supports. If they answered other to the gender identity question, they were asked to specify their gender identity and if they responded that they have one or more diagnosed learning disabilities to specify their diagnosis.

The Rosenburg Self-Esteem Scale

The Rosenburg Self-Esteem Scale also known as the RSES (Rosenburg, 1965) was used to measure the variable of self-esteem in both groups (see appendix E). It contains 10 statements that participants rate between 1 to 4 on a 4 point Likert scale. 1 meaning strongly agree, 2 meaning agree, 3 meaning disagree and 4 meaning strongly disagree. An example of one of the statements is "I take a positive attitude towards myself". Five questions are reversed scored and then the ten scores are summed together to create the participant's RSES score. The lowest possible score is 10 which means the individual has high self-esteem levels and the highest is 40

which means the individual have low self-esteem levels. RSES is regarded the world's most used questionnaire for measuring participants' self-esteem levels as it has been seen to be a reliable and valid scale (Bhatt & Bahadur, 2018; Lejzerowicz & Tomczyk, 2018). In the current study the Cronbach Alpha coefficient for RSES was .9 which shows good reliability.

College Academic Self-Efficacy Scale

The College Academic Self Efficacy Scale also known as CASES (Owen & Froman, 1988) was used to measure the variable of academic self-efficacy in both groups (see appendix G). The scale contains 33 statements that are rated with a 5 point Likert scale. An example of one of these statements is "Taking essay tests". In the original scale Owen and Froman used the letters A meaning quite a lot to E meaning very little and then converted the letters into the numbers 1 to 5 retrospectively. These numbers were then reversed scored. This was edited for this study to contain only the numbers 1 meaning very little to 5 meaning quite a lot as the options for the participants to select from. The scores are then summed and divided by 33 to create the participant's CASES score. In some of the statements the phrasing was changed for an Irish context such as, "Making professors respect you" to "Making lecturers respect you" (see appendix F & G). Scoring a CASES score of 5 means high academic self-efficacy and having a score of 1 means low academic self-efficacy. The scores can be spilt into three reliable subscales which for the purpose of this study will not be used, only the overall CASES score of each participant will be used (Hen & Goroshit, 2014). Furthermore, in the current study the Cronbach Alpha coefficient was .92 which shows good reliability however, it should be noted that some negative inter-item correlations were reported for the question about use of a computer and some of the other questions.

Design

The study design is a cross-sectional comparative between-subjects quantitative design. Group one is students in third level education in Ireland with one or more learning disability diagnosis/diagnoses and group two is students in third level education in Ireland with no learning disability diagnosis. The data will be collected with three questionnaires. First being a demographical questionnaire, the second questionnaire is the Rosenburg Self-Esteem Sale (RSES) (Rosenburg, 1965) and third is College Academic Self-Efficacy Scale (CASES) (Owen & Froman, 1988) (Appendix C, E & G). Both groups will complete the same questionnaires in the same setting online. Hypothesis one was investigated using a hierarchical multiple regression, the criterion variable was total CASES scores and the predictor variables were gender identity, levels of educational supports and learning disability diagnosis. Hypothesis two was investigated also using a hierarchical multiple regression with the same predictor variables but the criterion variable is total RSES scores. Hypotheses three, four and five were investigated using independent samples t-tests. Hypothesis three contained the test variable of age of diagnosis and the grouping variable of gender identities male and female. Hypothesis four was investigated using the test variable of total CASES scores and the grouping variable of if participants had one or more LD diagnosis or not. Hypothesis five contained the same grouping variable but the test variable was total RSES scores.

Procedure

Pilot Study

A pilot study was conducted with two participants and changes were made based on feedback from this pilot study and a new pilot participant completed the edited questionnaire. The phrasing was edited on question one from “I feel that I am a person of worth, at least on an

equal basis with others" to "I feel that I am a person of worth and am at least on an equal basis with others" (see Appendix D & E). These three participants' data was deleted after due to one participant not being a part of the inclusion criteria. Furthermore when creating the demographic questionnaire the researcher received feedback from the Learning and Teaching Support department of the National College of Ireland on best practice for accessible language to use.

Current Study

To participate participants must click the questionnaire link for Microsoft Forms, once opened the information sheet (see appendix A) was presented including a video of how to use the reading technology (see Appendix I). If the participates chose to continue by clicking next, they were presented with the consent form (see appendix B). They consent virtually by choosing yes or no when asked did they consent to participating in this study. The participants were informed that they could withdraw their participation at any time leading up to submitting their final response. Next the participates had to complete the demographic questionnaire, CASES questionnaire and RSES questionnaire (see appendix C, E & G). Once these were completed the participates were shown the debriefing sheet (see appendix H). The questionnaire takes approximately 10 minutes to complete without the reading technology and approximately 30 minutes to complete with the reading technology.

Results

Descriptive statistics

Descriptive statistics were conducted on the categorical variables of Gender Identity, Learning Disability Diagnosis, Year of Education and Learning Disability Diagnosis Groups and presented in Table 1. There was almost three times the amount of participants who identified as female (75%) than male (22.2%) furthermore. only 2.8% identified as non-binary and 0% as other gender identities within the total sample (*N*=72). Additionally there was approximately three times as many participants who self-reported as not having a learning disability diagnosis (76.4%) as participants who self-reported as being diagnosed with one or more learning disability (23.6%). Majority of participants were currently in first year (19.4%), second year (25%) or third year (34.7%) of their education at third level with the remaining being in fourth year (13.9%), masters (5.6%) and PhD (1.4%). Types of dyslexia was seen as the most prominent diagnosis within the sample who self-reported as having one or more learning disability diagnosis (3.3%) followed by participants with more than one diagnosis(23.5%), dyspraxia (17.6%), autism spectrum disorder (ASD) (11.8%) and attention-deficit/hyperactivity disorder (ADHD) (11.8%).

Table 1

Descriptive statistics for the categorical variable of Gender Identity, Learning Disability Diagnosis, Year of Education and Learning Disability Diagnosis Groups

Variable	Frequency	Valid %
Gender Identity		
Female	54	75.0
Male	16	22.2
Non-Binary	2	2.8
Other	0	0
Learning Disability Diagnosis		

Yes	17	23.6
No	55	76.4
Year of Education		
First Year	14	19.4
Second Year	18	25.0
Third Year	25	34.7
Fourth Year	10	13.9
Masters	4	5.6
PhD	1	1.4
Learning Disability Diagnosis Groups		
Autism Spectrum Disorder	2	11.8
Dyslexia	6	35.3
Dyspraxia	3	17.6
ADHD	2	11.8
More Than 1 Diagnosis	4	23.5

Descriptive statistics for each of the measured continuous variables in the current study are presented in Table 2. Preliminary analysis indicated that Age of Diagnosis, Total CASES and Total RSES do not violate tests of normality. Age of Diagnosis shows minimal outliers with a mean of 14.53 and a standard deviation of 8.23. The skewness result is 1.51 and kurtosis results is 4.16. The QQ plot is relatively tight to the line of expected value and the box plot shows one outlier. Kolmogorov-Smirnov significant score of .17. Total CASES shows no outliers with a mean of 2.91 and a standard deviation of .64. The skewness result is .06 and kurtosis results is -.66. The QQ plot is tight to the line of expected value and the box plot shows no outliers. Kolmogorov-Smirnov significant score of .02. Total RSES shows no outliers with a mean of 26.01 and a standard deviation of 5.98. The skewness result is -.17 and kurtosis results is -.24. The QQ plot is tight to the line of expected value and the box plot shows no outliers. Kolmogorov-Smirnov significant score of .20. Preliminary analysis indicated that Age do violate tests of normality. Age shows some outliers with a mean of 21.59 and a standard deviation of 2.83. The skewness result is 3.58 and kurtosis results is 19.96. The QQ plot is relatively tight to

the line of expected value and the box plot shows 3 outliers. Kolmogorov-Smirnov significant score of .000.

Table 2

Descriptive statistics for the continuous variables of Age, Total CASES, Total RSES and Age of Diagnosis

Variable	*M* [95% CI]	*Median*	*SE*	*SD*	*Range*
Age	21.59[20.92-22.26]	21	.34	2.83	18-39
Total CASES	2.91[2.76-3.06]	2.92	.08	.64	1.67-4.39
Total RSES	26.01[24.61-27.42]	25.50	.70	5.98	11-40
Age of Diagnosis	14.53[10.30-18.76]	14	1.10	8.23	3-39

Inferential Statistics

Hypothesis One

Hierarchical multiple regression was conducted to assess the ability of learning disability diagnosis to predict college academic self-efficacy levels (Total CASES) after controlling for gender identity and use of educational supports in third level education in Ireland as presented in Table 1. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Gender identity and use of educational supports were entered at step 1, explaining 3.1% of the variance in Total CASES. After the entry of learning disability diagnosis at step 2 the total variance explained by the model as a whole was 8.9%, $F(3, 68) = 2.21$, p=.095 . The learning disability diagnosis explained an additional 5.7% of the variance in Total CASES after controlling for gender identity and use of educational supports, *R squared change*= .06, *F change*(1,68)= 4.27, p= .043 . In the final model, only leaning disability diagnosis was statistically significant, with learning disability diagnosis

scoring a higher beta value (*beta*= .29, *p*=.043) than gender identity (*beta*= -.01, *p*=.965) and use of educational support (*beta*= .01, *p*=.962).

Table 1

Hierarchical multiple regression table of CASES

Variable	R^2	R^2 Change	*B*	*SE*	*β*	*t*	*p*
1	.03						
Gender Identity			-.03	.15	-.02	-.18	.862
Use of Educational Supports			.25	.17	.18	1.49	.140
2	.09	.06					
Gender Identity			-.01	.15	-.01	-.04	.965
Use of Educational Supports			.01	.20	.01	.05	.962
Learning Disability Diagnosis			.44*	.21	.29	2.07	.043

Note. R^2 = R-squared; R^2 Change = R-squared Change; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B; CI 95% (B) = 95% confidence interval for B; N = 398; Statistical significance: *p < .05; **p < .01; ***p < .001

Hypothesis Two

Hierarchical multiple regression was conducted to assess the ability of learning disability diagnosis to predict self-esteem levels (Total RSES) after controlling for gender identity and use of educational supports in third level education in Ireland as presented in Table 2. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Gender identity and use of educational supports were entered at step 1, explaining 3.8% of the variance in Total RSES. After the entry of learning disability diagnosis at step 2 the total variance explained by the model as a whole was 6%, *F*(3, 68) = 1.44, *p*=.239 . The learning disability diagnosis explained an additional 2.2% of the variance in Total RSES after controlling for gender identity and use of educational supports, *R*

squared change= .02, *F change*(1,68)= 11.56, *p*= .215 . In the final model, none of the measures were statistically significant with learning disability diagnosis scoring a lower beta value (*beta*= -.18, *p*=.215) than gender identity (*beta*= .18, *p*=.139) and use of educational support (*beta*= .03, *p*=.819).

Table 2

Hierarchical multiple regression table of RSES

Variable	R^2	R^2 Change	*B*	*SE*	*β*	*t*	*p*
1	.04						
Gender Identity			-1.98	1.41	-.17	-1.41	.162
Use of Educational Supports			-.95	1.56	-.07	-.61	.55
2	.06	.02					
Gender Identity			-2.10	1.40	-.18	-1.50	.14
Use of Educational Supports			.44	1.91	.03	.23	.819
Learning Disability Diagnosis			-2.52	2.02	-.18	-1.25	.215

Note. R^2 = R-squared; R^2 Change = R-squared Change; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B; CI 95% (B) = 95% confidence interval for B; N = 398; Statistical significance: *p < .05; **p < .01; ***p < .001

Hypothesis Three

An independent samples t-test was conducted to compare age of diagnosis between female and male participants with one or more learning disability diagnosis. Preliminary analysis was implemented to ensure no violation of the assumptions of normality and homogeneity of variance. There was marginally statistically insignificant difference in scores, with females (*M*= 16.62 , *SD*= 8.14) scoring higher than males (*M*= 7.75, *SD*= 4.03); *t*(15)= 2.07, *p*= .056). The magnitude of the differences in the means (*mean difference* = 8.87, *95% CI*= -.28,) was large (*Cohen's d* = 1.46).

Hypothesis Four

An independent samples t-test was conducted to compare Total CASES score between participants with one or more learning disability diagnosis and participants without diagnosis. Preliminary analysis was implemented to ensure no violation of the assumptions of normality and homogeneity of variance. There was significant difference in scores, with LD diagnosed participants (*M*= 2.57 , *SD*= .64) scoring lower than participants with no LD diagnosis (*M*= 3.02, *SD*= .61); *t*(70)= -2.61, *p*= .011). The magnitude of the differences in the means (*mean difference* = -.45, *95% CI*= -.79,) was medium (*Cohen's d* = -0.72).

Hypothesis Five

An independent samples t-test was conducted to compare Total RSES score between participants with one or more learning disability diagnosis and participants without diagnosis. Preliminary analysis was implemented to ensure no violation of the assumptions of normality and homogeneity of variance. There was no significant difference in scores, with LD diagnosed participants (M= 27.82 , SD= 5.36) scoring higher than participants with no LD diagnosis (*M*= 25.45, *SD*= 6.09); *t*(70)= 1.44, *p*= .154). The magnitude of the differences in the means (*mean difference* = 2.37, *95% CI*= -.91,) was small (*Cohen's d* = 0.41).

Discussion

The current study aimed to investigate the differences in levels of college academic self-efficacy and self-esteem between third level students in Ireland with and without learning disability diagnosis. Furthermore, the predictive factor of learning disability diagnosis on levels of college academic self-efficacy and self-esteem after factoring in gender identity and levels of educational supports used was also examined. Finally, differences in age of diagnosis between the gender identities of participants who self-reported having one or more learning disability diagnosis.

After analysing the results of this study it was seen that either having at least one learning disability diagnosis or not showed to have a predictive effect on total CASES scores after controlling for gender identity and levels of educational supports. Whether participants have learning disability diagnosis or not accounted for an additional 5.7% of variance in Total CASES scores (Please note: no LD diagnosis was coded as 2 and LD diagnosis was coded as 1). Between the three predictor variables only LD diagnosis was statistically significant in the final model (*beta*= .29, *p*=.043) leaving gender identity (*beta*= -.01, *p*=.965) and use of educational support (*beta*= .01, *p*=.962) to be statistically insignificant. Resulting from this, the null hypothesis was rejected meaning that LD diagnosis is a predictive factor for variance in CASES scores after controlling for gender identity and levels of use of educational support. The insignificance of gender identities as a predictor of variance could be because of the smaller sample size and majority identifying as female as specific psychological and behavioural differences have been seen between girls and boys with LD diagnosis (Valas, 2001). Students with LD diagnosis have been reported to have lower levels of academic self-efficacy alongside lower levels of academic self-concept and academic attribution style (Tabassam & Grainger, 2002).

As opposed to the fact that learning disability diagnosis did not show a statistically significant predictive factor in participants' total RSES scores after controlling for gender identity and levels of educational supports (p= .215). Additionally, all three of the variables LD diagnosis (*beta*= -.18, p=.215), gender identity (*beta*= .18, p=.139) or use of educational support (*beta*= .03, p=.819) used for the regression analysis were not statistically significant. Due to this, the null hypothesis of learning disability, gender identity and use of educational supports are not seen to be predictive of variance in total RSES scores was accepted. The point surrounding gender identity and sample size from the previous hierarchical multiple regression can be applied to the analysis of this regression also (Valas, 2001). This is contrasting to previous research which showed that individuals with LD diagnosis showed lower self-esteem in comparison to individuals without (Peleg, 2009). Self-esteem levels and self-efficacy levels have been seen to correlate in a positive way therefore, future research could conduct analysis between these two variables to add to the literature (Blake & Rust, 2002).

There was a marginally statistically insignificant difference in age of diagnosis between the gender identities of male and female participants who self-reported as being diagnosed with one or more learning disability (p=.056). The results showed that participants who identified as female had a higher average age of diagnosis (M= 16.62, SD= 8.14) that those who identified as male (M= 7.75, SD= 4.03). The effect size was large (*Cohen's d* = 1.46). Only these two gender identities were used as other gender identities were in the sample group who did not self-report being diagnosed with one or more learning disabilities. This may be due to the low sample size of participates who self-report as having one or more learning disability diagnosis within this particular certain study sample (N= 17). Future research should gather a larger sample to examine if the current study's findings of individual who identified as female are diagnosed at an

older age than those who identify as male is fully supported. This analysis was important to conduct as previous research has reported the later in life the age of diagnosis of a physical or learning disability the greater the negative influence on levels of social self-efficacy as the younger the diagnosis the greater levels of acceptance of diagnosis (Blake & Rust, 2002). LD diagnosis has been seen to be impactful in different ways such as, children with LD diagnosis showing an increase in self-esteem levels after diagnosis (MacMaster et al., 2002).

Results showed a statistically significant increase (p= .011) in total CASES scores for those who are not diagnosed with a LD (M= 3.02, SD= .61) in comparison who are diagnosed with one or more LD (M= 2.57, SD= .64). The effect size was medium (*Cohen's d* = -0.72). CASES is scored by the lower the individual's score the lower the academic self-efficacy (Owen & Froman, 1988). Due to this, the null hypothesis has been rejected. This indicates that within this sample participants who are diagnosed with one or more learning disability diagnosis has lower levels of college academic self-efficacy than participants who are not diagnosed with any LD. These results add to the literature as they were similar to previous research which found LD diagnosed college students experienced lower levels of academic self-efficacy which was to be influenced by loneliness at the beginning of the academic year and by hopeful thinking after one month of the semester (Feldman et al., 2016). Self-efficacy as a whole has been noted to be malleable (Hirose et al., 1999), therefore it may be useful to further analysis this hypothesis in a longitudinal study where the sample's scores are taken in first year and in final year of their degree. In a sample of children with LD diagnosis the same findings of lower levels of academic self-efficacy were found in comparison to children without a diagnosis (Lackaye al., 2006). Future research should aim to investigate why this difference occurs with individuals with one or

more LD diagnosis and their academic self-efficacy in comparison to their peers with no diagnosis.

In contrast to this, the results of this study indicated that there was not a statistically significant difference (p= .154) in total RSES scores for students in third level education in Ireland who self-reported as having one or more diagnosed learning disability (M= 27.82, SD= 5.36) and students who did not (M= 25.45, SD= 6.09). The effect size was small (*Cohen's d* = 0.41). This has led to the null hypothesis being accepted meaning that within this sample having one or more diagnosed learning disability does not affect self-esteem levels between participants. It is important to note that the higher the RSES score the lower the self-esteem (Rosenburg, 1965). This contradicts a study conducted by Valas which showed lower levels of self-esteem amongst other variables such as lower levels of academic expectations for students with learning disability diagnosis and "low achieving" students (pg. 111, 2001). However this could be due to their whole sample being larger (N= 1833), their age demographic being children and their data being gathered by reports from the teacher.

Limitations of The Current Study

The scale College Academic Self-efficacy scale contained some statements such as, "using a computer" which showed negative levels of inter-item correlation when Cronbach's Alpha analysis was conducted for the reliability in this study. Future research may consider changing these statements. Participants were asked to self-report as having one or more learning disability diagnosis which could reduce the reliability of this study due to perception of what classifies a learning disability. There is differences about which diagnosis can be categorised as a learning disability within studies such as, ADHD and specific learning disability as two categories (Mana et al., 2020) or conducting analysis with learning disabilities and physical

disabilities and coding them as visible and invisible (Blake & Rust, 2002). According to the Learning Disabilities Association of America, dyscalculia, dysgraphia, dyslexia, non-verbal learning disabilities, oral or written language disorder and specific reading comprehension deficit are types of learning disability diagnosis but ADHD, dyspraxia and executive functioning are categorised as disorders that are related to LDs (2022). If this study was to be conducted again it would be recommended to include a list of types of learning disability diagnosis in the demographic questionnaire when asking participants the two questions of if they are diagnosed and to specify their diagnosis.

The discrepancy in this study's sample size between the two control groups of third level students in Ireland who self-report as having one or more learning disability diagnosis and third level students in Ireland without a learning disability diagnosis is similar to previous research (Feldman et al., 2016) however there are studies whose spread is more even (Lackaye et al., 2006; Saday Duman et al., 2017). The sample size of this study was relatively small (*N*= 72) and mainly consisted of female participants (75%) which is similar to the gender proportion of other studies (Feldman et al., 2016; Niazov et al., 2021). However a negative aspect of this is that there was no participants in the group with one or more LD diagnosis who identified as non-binary or any gender identity other than male or female. Future studies could attempt to recruit more participants with different gender identities to attempt to improve generalisability.

Additionally, due to the lower proportion of participants who self-reported as having one or more LD diagnosis (*N*=17) there was not enough participants to create a statistically significant comparison between diagnosis type (as seen in Table 1) using an ANOVA according to G power which recommended a sample size of 125 for five groups. Despite these limitations a major strength of this study was the researcher use of best practice for accessibility such as

implementing reading technology into the questionnaire and large text in bold sans serif fonts (Marinus et al., 2016; Rello & Baeza-Yates, 2016; Tuffrey-Wijne et al., 2008). Furthermore the use of a pilot study to ensure that the questionnaire was easy to comprehend and that the reading technology was easy to use.

Study Implications

As previously stated, self-efficacy can fluctuate and change (Hirose et al., 1999) and previous research has stated that academic self-efficacy has been seen to have both a direct influence on the increase of academic success (Ahmadi, 2020). Due to this and the findings of this study, further research should be conducted as to why participants with one or more LD diagnosis have lower levels of academic self-efficacy than those without. As a repercussion of the data presented in this study along with the previous research, it is pivotal to give students with one or more learning disability diagnosis the tools, resources, interventions and support they need to maintain a higher level of academic self-efficacy and self-esteem while in third level education in Ireland to promote their learning, goals, and achievements such as, educational therapy (Saday Duman et al., 2017). The findings of this study can influence the literature surrounding Bandura's theory of self-efficacy due to the specific nature of the sample and the type of self-efficacy (Jungert & Andersson, 2013; Hirose et al., 1999). The information from this study combined with other surveys and research studies could improve the framework for students in third level education in Ireland in relation to best practices for students with one of more learning disabilities diagnosis and educational supports (McGregor et al., 2016).

Conclusion

The current study found that learning disability diagnosis was a predictor for variance in academic self-efficacy levels after controlling for gender identity and use of educational support

however it was not for levels of self-esteem in a sample of 72 students in third level education in Ireland. This study also found a marginally statistically insignificant difference in age of diagnosis between the gender identities male and female of participants with one or more learning disability diagnosis. Finally, the results of this study showed that participants in third level education in Ireland with one or more learning disability diagnosis have lower levels of academic self-efficacy than those with no diagnosis. Contradictory to this, there was not a statistically significant difference in levels of self-esteem between participants with and without one or more learning disability diagnosis. Future research should aim to investigate why students in third level education in Ireland who are diagnosed with one or more LD diagnosis have lower levels of academic self-efficacy in comparison to their peers.

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Appendinces

Appendix A

Hello!

Thank you for taking interest in participating in my study!

If you would like to use reading technology to read this study please watch the YouTube video attached to learn how to turn on this software.

My name is Sinéad Woods and I am a final year BA(Hons) Psychology Student in the National College of Ireland. I am currently conducting my final year project on the topic of learning disabilities diagnosis and academic self-efficacy and self-esteem.

This study is open to **all third level institution students in Ireland with or without learning disability/disabilities diagnosis** who are **over the age of 18**.

If you would like to take part, please read the rest of this form which explains more about the study and what taking part would involve for you.

Do not hesitate to contact myself, Sinéad Woods (x19383593@student.ncirl.ie) or my supervisor Dr. Caoimhe Hannigan (Caoimhe.Hannigan@ncirl.ie) with any questions you might have.

ABOUT THE STUDY:

As a final year psychology student, I am conducting an independent research project with the guidance of my supervisor Dr. Caoimhe Hannigan. The purpose of this study is investigating the differences in self-esteem and academic self-efficacy between third level institution students with learning disability/disabilities diagnosis and students with

no learning disability diagnosis while examining your exposure to institutional supports, gender identity, current age, and age of learning disability diagnosis if diagnosed. The differences in age of diagnosis between gender identities and differences in academic self-efficacy and self-esteem levels between types of learning disabilities diagnosis are also being investigated.

WHAT DOES THE STUDY INVOLVE?

If you chose to participate, you will be asked to complete this short online questionnaire which will take **approximately 10 minutes without reading software and 30 minutes with reading software to complete**. This questionnaire includes some demographical questions about yourself such as your age and gender identity and whether you have a learning disability/disabilities diagnosis and some questions surrounding this, questions that measure your feelings, attitudes and opinions towards your ability to complete academic activities, and your self-esteem levels.

WHO CAN TAKE PART?

To take part in this study, you must be **aged 18 or over** and are **currently a student in a third level institution in Ireland with or without a learning disability/disabilities diagnosis**.

BACKGROUND OF THE STUDY:

The study has been reviewed and accepted for ethical approval by the National College of Ireland Research Ethics Committee.

DO I HAVE TO TAKE PART? & RIGHT TO WITHDRAW:

You are under no obligation to take part in this study and are free to withdraw at any time throughout the study without penalty. Please note however, once you submit your answers to us at the end of the questionnaire you cannot withdraw your data.

If you decide to take part in the study you will be asked to complete a consent form and agree that you have read this information sheet. You are allowed to screenshot both of these for your own personal records if you wish. Your data will be submitted and stored anonymously.

You are free to ask the researcher Sinéad Woods or the supervisor Dr. Caoimhe Hannigan questions at any point of the study. If you decide to withdraw from the study this will not affect your relationship with the researcher, the supervisor of the National College of Ireland (NCI).

WHAT ARE THE POSSIBLE RISKS AND BENEFITS OF TAKING PART?

There is not direct benefit for you for taking part in this project but the information gathered will help us understand more about academic self-efficacy and self-esteem and learning disabilities and external factors contributing to this.

There is a minor risk that some of the questions may cause some distress to participants such as, “I certainly feel useless at times”. If you are experiencing any distress during participation, you can exit the online questionnaire at any time and I have included some contact details for some helpful services.

CONFIDENTIALITY:

Your data collected during the study will be kept confidentially. The questionnaire is **anonymous,** and it **will not be possible to identity participant from their answers to any questionnaire items**.

Any of the data collected will be encrypted and securely stored on a password protected file on a password protected computer.

Any information provided will only be accessed by the researcher and the supervisor but no other individual within or outside of NCI.

Once the study is completed the data will be stored for 5 years in accordance with NCI's data retention policy.

WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?

The research project will be written and presented as a thesis for examination purposes and may be presented at national and international conferences and published in scientific journals. If you would like a copy of the research project once it is completed you can receive a copy upon a request.

I am hoping you will not experience any negative consequences from completing the study however, there is a possibility of some distress being caused from some of the questions based around your self-esteem levels and your perception of your abilities to complete academic activities. If any of the questions during the study cause you distress you are under no obligation to complete the study and may terminate your participation

by exiting out of the questionnaire.

Please be aware that if you would like to use the reading software throughout this study you are able to.

Here are a list of supports:

COUNSELLING SERVICES AT NCI: Email Counselling@ncirl.ie

LEARNING AND TEACHING SUPPORTS AT NCI: Email Karen.Mooney@ncirl.ie

AWARE: Call 1800 804 484

SAMARITANS: Call 116 123 or Text 087 260 9090

PIETA HOUSE: Call 1800 247 237

If you need any further information you can contact:

Researcher: Sinéad Woods x19383593@student.ncirl.ie

Supervisor: Dr. Caoimhe Hannigan Caoimhe.Hannigan@ncirl.ie

Kind Regards,

Sinéad Woods

Appendix B Consent form

By agreeing to this consent form and participate in this research project I comprehend:

- I voluntarily agree to participate in this final year research project conducted by Sinead Woods, an undergraduate psychology student at National College of Ireland.
- I understand I must be 18 years old or older to take part in this study.
- I understand that this study has been approved by the NCI Ethics Committee.
- I understand that even if I consent to participate now, I can withdraw my consent at any time.
- I have had the purpose, nature and background of the study explained to me in writing and I have had the opportunity to ask questions.
- I understand that participation involves completing the questionnaire.
- I understand that I do not benefit directly from participating in this study.
- I understand that all the information I submit will be kept confidential.
- I understand that any results will be kept anonymous and that the data will be used in a final year project thesis that will be submitted to the Psychology Department in the School of Business in NCI.
- I understand that I am able to contact the researcher and the supervisor with any question surrounding the study.

- I understand that there is minor risk of distress from completing the questionnaire for this study as outlined in previous information given.
- I understand that I can withdraw consent at any time leading up to submission of the questionnaire

Sinead Woods, Psychology, X19383593@student.ncirl.ie

Dr. Caoimhe Hannigan, Supervisor, Caoimhe.Hannigan@ncirl.ie

I understand and consent to taking part in this study:

Yes

No

Appendix C Demographic Questionnaire

1. What age are you? ☐

2. Are you currently a third level student in Ireland?

   YES ☐ No ☐

3. What do you identify as?

   Male ☐

   Female ☐

   Non-binary ☐

   Other

4. If you answered other, please specify:

5. Year of education:

   First Year ☐

   Second Year ☐

   Third Year ☐

   Fourth Year ☐

   Masters ☐

   PhD ☐

6. Are you diagnosed with a learning disability or disabilities?

   Yes No

7. If you have been diagnosed with a learning disability, what age were you diagnosed?

8. If you have been diagnosed with a learning disability, what is your diagnosis?

9. While in third level education have you received any institutional supports such as, examination supports? Please tick the box.

YES

NO

Appendix D Original Rosenburg Self-Esteem Scale Questionnaire

Rate the items using the following scale:

1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree

1. I feel that I am a person of worth, at least on an equal basis with others.

2. I feel that I have a number of good qualities.

3. All in all, I am inclined to feel that I am a failure.*

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.*

6. I take a positive attitude toward myself.

7. On the whole, I am satisfied with myself

8. I wish I could have more respect for myself.*

9. I certainly feel useless at times.*

10. At times I think I am no good at all.*

* = reverse score

Appendix E Edited Rosenburg Self-Esteem Scale Questionnaire

The following questions ask about your views of yourself.

Remember there are no right or wrong answers, just answer as accurately as possible. Please select a number from 1 to 4 to indicate your answer.

- Select 4 if you **strongly disagree** that the statement describes you.
- Select 3 if you **disagree** that the statement describes you.
- Select 2 if you **agree** that the statement describes you.
- Select 1 if you **strongly agree** that the statement describes you.

1. I feel that I am a person of worth and am at least on an equal basis with others. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

2. I feel that I have a number of good qualities. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

3. All in all, I am inclined to feel that I am a failure. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

4. I am able to do things as well as most other people. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

5. I feel I do not have much to be proud of. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

6. I take a positive attitude toward myself. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

7. On the whole, I am satisfied with myself 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

8. I wish I could have more respect for myself. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

9. I certainly feel useless at times. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

10. At times I think I am no good at all. 1 (**Strongly agree**) 2 (**Agree**) 3(**Disagree**) 4(**Strongly Disagree**)

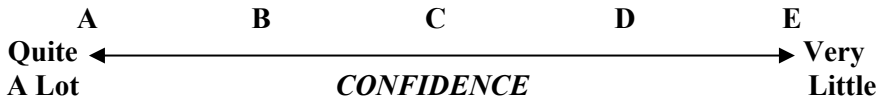
Appendix F Original College Academic Self-Efficacy Scale Questionnaire

DIRECTIONS. We are interested in learning more about you to help us improve our program. Your responses are strictly confidential and will not be shown to others. Do not sign your name. We hope you will answer each item, but there are no penalties for omitting an item.

Male____ Female____ Age_____

Estimate your current grade point average_____

How much confidence do you have about doing each of the behaviors listed below? Circle the letters that best represent your confidence.



Lots **Little**

A B C D E 1. Taking well-organized notes during a lecture.

A B C D E 2. Participating in a class discussion.

A B C D E 3. Answering a question in a large class.

A B C D E 4. Answering a question in a small class.

A B C D E 5. Taking "objective" tests (multiple-choice, T-F, matching)

A B C D E 6. Taking essay tests.

A B C D E 7. Writing a high quality term paper.

A B C D E 8. Listening carefully during a lecture on a difficult topic.

A B C D E 9. Tutoring another student.

A B C D E 10. Explaining a concept to another student.

A B C D E 11. Asking a professor in class to review a concept you don't understand.

A B C D E 12. Earning good marks in most courses.

A B C D E 13. Studying enough to understand content thoroughly.

A B C D E 14. Running for student government office.

A B C D E 15. Participating in extracurricular events (sports, clubs).

A B C D E 16. Making professors respect you.

A B C D E 17. Attending class regularly.

A B C D E 18. Attending class consistently in a dull course.

A B C D E 19. Making a professor think you're paying attention in class.

A B C D E 20. Understanding most ideas you read in your texts.

A B C D E 21. Understanding most ideas presented in class.

A B C D E 22. Performing simple math computations.

A B C D E 23. Using a computer.

A B C D E 24. Mastering most content in a math course.

A B C D E 25. Talking to a professor privately to get to know him or her.

A B C D E 26. Relating course content to material in other courses.

A B C D E 27. Challenging a professor's opinion in class.

A B C D E 28. Applying lecture content to a laboratory session.

A B C D E 29. Making good use of the library.

A B C D E 30. Getting good grades.

A B C D E 31. Spreading out studying instead of cramming.

A B C D E 32. Understanding difficult passages in textbooks.

A B C D E 33. Mastering content in a course you're not interested in.

Thanks for your help!

Appendix G Edited College Academic Self-Efficacy Scale Questionnaire

Remember there are no right or wrong answers, just answer as accurately as possible. Please select a number from 1 to 5 to indicate your answer.

- **Select 5** if you have **quite a lot of confidence** in that situation.
- **Select 1** if you have **very little confidence** in that situation.
- If the statement is more or less true of you, find the number between 1 and 5 that best describes you.

1. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence. Taking well-organised notes during a lecture. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

2. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Participating in a class discussion. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

3. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Answering a question in a large class. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

4. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Answering a question in a small class. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

5. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Taking "objective" tests (for example: multiple choice, True and False, matching). 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

6. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Taking essay tests. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

7. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Writing a high quality assignment. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

8. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Listening carefully during a lecture on a difficult topic. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

9. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Tutoring another student. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

10. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Explaining a concept to another student. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

11. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Asking a lecturer in class to review a concept you don't understand. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

12. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Earning good marks in most modules. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

13. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Studying enough to understand content thoroughly. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

14. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Running for official student roles such as Students' Union or class representative. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

15. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Participating in extracurricular events (sports, clubs). 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

16. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Making lecturers respect you. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

17. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Attending class regularly. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

18. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Attending class consistently in a dull module. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

19. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Making a lecturer think you're paying attention in class. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

20. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Understanding most ideas you read in your texts. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

21. **How much confidence do you have about doing the behaviour listed below?**

Click the number that best represent your confidence.

Understanding most ideas presented in class. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

22. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Performing simple mathematical calculations. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

23. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Using a computer. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

24. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Mastering most content in a maths module. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

25. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Talking to a lecturer privately to get to know him or her. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

26. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Relating course content to material in other courses. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

27. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Challenging a lecturer's opinion in class. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

28. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Applying lecture content to a laboratory session or practical. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

29. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Making good use of the library. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

30. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Getting good grades. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

31. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Spreading out studying instead of cramming. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

32. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Understanding difficult passages in textbooks. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

33. How much confidence do you have about doing the behaviour listed below?

Click the number that best represent your confidence.

Mastering content in a module you're not interested in. 1**(Very Little)** 2 3 4 5**(Quite A Lot)**

Appendix H: Debrief Sheet

Thank you for taking part in my study. Please click submit to finish the questionnaire.

This study is concerned with levels of self-esteem and academic self-efficacy of students with learning disabilities in comparison to students with no learning disability diagnosis students in third level education, the differences in age of diagnosis between gender identities and differences in academic self-efficacy and self-esteem levels between types of learning disabilities diagnosis.

All students were asked to complete the same three questionnaires. All information you have provided will be kept confidential and anonymous.

A study like this can help aid third level institutions with improving student experience for students with and without learning disabilities.

If you have any questions, please do not hesitate to contact myself, Sinead Woods x19383593@student.ncirl.ie or my supervisor Dr. Caoimhe Hannigan Caoimhe.Hannigan@ncirl.ie

Here are a list of supports:

COUNSELLING SERVICE AT NCI: email Counselling@NCIRL.ie

LEARNING AND TEACHING SUPPORT AT NCI: email karen.mooney@ncirl.ie

AWARE: call 1800 804 848

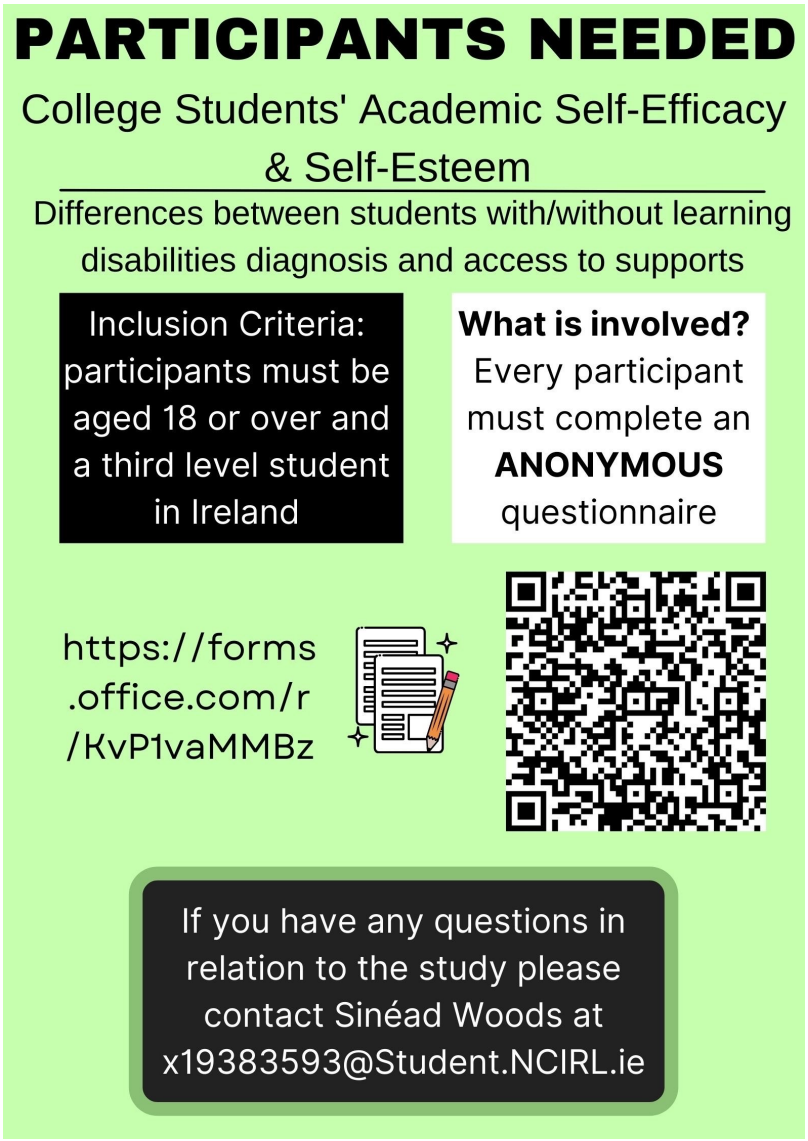
SAMARITANS: call 116 123 OR TEXT 087 260 9090

PIETA HOUSE: call 1800 247 247

Appendix I: Reading Technology YouTube Video Link

https://youtu.be/XsDOFWoYDHg

Appendix J: Recruitment Poster



Appendix K: Example Social Media Posts