

## ***Moral Competence of Teacher Education Students. The Role of Guided Reflection and Responsibility-Taking Opportunities***



Daniel Tello

(Pädagogische Hochschule Ludwigsburg, Ludwigsburg, Germany; dtello@posteo.de)  
ORCID: 0000-0002-0391-1446

Marisa Meza Pardo

(Pontificia Universidad Católica de Chile, Santiago, Chile; mmeza@puc.cl)  
ORCID: 0000-0002-8487-6258

Jaime Retamal Salazar

(Universidad de Santiago de Chile, Santiago, Chile; jaime.retamal@usach.cl)  
ORCID: 0000-0001-9179-6515

**Abstract:** Teacher education needs to focus on moral development and prepare its students to face the moral dilemmas encountered in the teaching profession. This study presents the first results of a long-term research project conducted between 2017 and 2022 in Chilean Universities. The relationship between the learning environment – defined in terms of Responsibility Taking (RT) and Guided Reflection (GR) opportunities – and differences in moral competence was evaluated using a cross-sectional design, comparing last- and first-year students (N=671). The results suggest a significant influence of RT and GR on moral competence. Being a tutor at university is identified as one of those opportunities.

**Keywords:** moral development; moral competence; teacher education; responsibility taking; guided reflection.

### **I. Introduction**

Teaching is a moral act, and working as a schoolteacher means constantly making moral decisions (Cooper 2021; Sanger & Osguthorpe 2013)<sup>1</sup>. Teachers need to make ethical judgments regarding their relationship with students, the application of the curriculum, the choice of methodology, and relationships with colleagues. Many of these decisions involve dilemmas that require teachers to have the professional abilities needed to promote children's learning, rather than simply apply a norm (Harant & Schreiber 2021).

<sup>1</sup> This work was supported by the Agencia Nacional de Investigación y Desarrollo of Chile (ANID); FONDECYT grant no. 1200196, "Oportunidades de desarrollo moral democrático durante la formación inicial docente. ¿Qué aporta lo curricular y lo extra-curricular?".

Hence, in many countries, teacher education follows various general prescriptions or teaching standards that teachers need to fulfill from the first day they start working at a school. In United States, for instance, the National Board for Professional Teaching Standards (2022) summarizes these tasks in five propositions regarding the attitudes of teachers towards all students' learning, including ethical issues. In Germany, the Conference of the Ministers of Culture (Kultusministerkonferenz 2014) proposes standards for teacher education in a similar way. In Latin America, for example in Chile (Ministry of Education 2021), teachers are expected to behave according to standards prescribed for them regarding lesson plans, the inclusion of all students, and the teacher's professional responsibilities.

However, at schools, teachers face realities that require them to decide between different courses of action, where standards sometimes can come into conflict with the values they should support, or with their own ideals. Young teachers, for example, face difficulties during their first years at school, as Ulvik and colleagues (Ulvik, Amith, & Helleve 2017) show. In their research, these authors show how dilemmas arise when teachers need to choose between ideals and possibilities. The professional role, the relationship with the students, the methodology used to teach the subject, and the school environment are all areas mentioned when young teachers are asked to describe their difficulties at work, as they have high ideals that they find hard to fulfill. Sometimes they need to prioritize students' needs over external demands, and in other situations the curriculum seems to be inadequate compared to the needs of the students in the classroom, thus posing moral questions they need to solve.

These kinds of conflicts are also mentioned by experienced teachers, as Ehrich and colleagues (Ehrich, Kimber, Millwater, & Cranston 2010) report. They encounter dilemmas of confidentiality, conflicts between home and school, problems with cheating, and difficulties in defending the rights of minority groups, or in trying to be consistent in applying common rules at schools. Also, the atmosphere in schools, distributive justice, loyalty to colleagues, and the family agenda are issues that lead to dilemma situations in schools (Shapira-Lishchinsky 2010). More recent investigations also confirm those ethical conflicts in areas regarding the protection of students, fair assessment and evaluation, the protection of colleagues, and parental intervention (Tezcan & Guvenc 2020).

In order to prepare students for these kinds of challenges, universities and teacher education institutions often choose to offer ethical and practice seminars to develop some essential skills required to deal with the moral nature of teaching (Ronkainen, Kuusisto, Eisenschmidt, & Tirri 2021). Nevertheless, the inclusion of such seminars within the teacher education program is not necessarily sufficient to achieve this important goal. Given the moral character of education, and considering the kinds of dilemmas associated with teaching practice at schools, there is a necessity for a more detailed inquiry into this issue: Which factors promote the moral development of teacher education students? Which instructional opportunities can be used to foster the moral education of future

teachers?

Within the moral education tradition, different theoretical directions are proposed for these questions. In the present study, we follow a moral development perspective focused on the opportunities that students need to develop their moral competence, considering the cognitive processes that arise in such conflict situations.

## **II. Moral Education as a Development Process**

In theoretical terms, conflicts with social norms have been largely studied as moral issues. For Durkheim (Durkheim 1925/1968), conflicts arise when people deviate from the norm, and the role of moral education is primarily to orientate people to follow it. However, Piaget (Piaget 1932/1975) demonstrated that the relationship between individuals and the norm is not only an issue of obedience or deviance from the norm, but a process of moral judgment – a process whereby individuals can move from *moral heteronomy* to *moral autonomy*, that is, to defining their own norms by reason. Kohlberg (Kohlberg 2009; Kohlberg 1984; Kohlberg 1958) based his work on Piaget's research and extensively studied the relations between individuals and norms, showing a structure of six types of moral orientations organized into three phases: pre-conventional, conventional, and post-conventional, while also arguing in favor of an ascending development fostered by growth and education.

Georg Lind (Lind 2019; Lind 2000; Lind 1984) based his investigations of morality on the development perspective started by Piaget and continued by Kohlberg. He focused his theory on the dual aspects of moral behavior mentioned in Kohlberg's later works (Kohlberg 1973), differentiating between moral orientations and moral structure. The moral orientations constitute the affective aspect of morality, which can be understood as the moral ideals that people – and thus also teachers – express in their behavior. The moral structure, on the other hand, represents the cognitive aspect of morality, which is inseparable from the affective aspect and manifests itself in the ability to make practical judgments about the situation at hand. Kohlberg described this as moral-judgment competence (Kohlberg 1964, 425), defining it as “the capacity to make decisions and judgments which are moral (i.e., based on internal principles) and to act in accordance with such judgments” (Kohlberg 1964, 425). Later, other scholars identified this aspect as moral cognition (Nucci 2016), whereas Lind defined it as *moral competence*, “the ability to resolve problems and conflicts on the basis of universal moral principles by means of deliberation and discussion, instead of through using violence, deceit, and submission to others” (Lind 2019, 178).

### **III. Moral Development in Higher Education**

In recent years, research on moral cognition, and especially on moral competence, has grown in different fields. Some of the most relevant studies on moral cognition are those of Nucci (Nucci 2016), Schwarz and colleagues (Schwarz et al. 2022), and Curren (Curren 2014). Regarding studies on moral competence, on the other hand, many have focused on its development in higher education settings. For example, Desplaces et al. (Desplaces, Melchar, Beauvais, & Bosco 2007) studied the moral competence of business education students. In public administration, de Souza and colleagues (de Souza, Serafin, & Santos 2019) reviewed the level of moral competence among their students. Holtz (Holtz 2013) researched the development of moral competence in information technology students. In the health sector, Enderle and colleagues (Enderle, da Silveira, Dalmolin, Lunardi, Avila, & Dominguez 2018) focused on nursing students, while Martins and colleagues (Martins, Santos, Bataglia, & Duarte 2021) studied the moral competence of nursing and medical students. In the social sector, Laiciakova (Laiciakova 2013) assessed the level of moral competence among social work students, while Schillinger (Schillinger 2006) focused on the level of moral competence of psychology, business administration, and medical school students. In education, Meza and Guerrero (Meza & Guerrero 2016), Tello and colleagues (Tello, Meza, & Retamal 2018), as well as Bronikowska and Kroc (Bronikowska & Kroc 2019), researched the moral competence of teacher education students. More recently, Bataglia and colleagues (Bataglia, Alves, & Parente 2024) also conducted investigations of moral competence in educational settings. All these investigations agree on the positive effect of education on the development of moral competence. However, they also show that not all educational programs have the same effect on the development of moral competence among students.

Colby and Lind have analyzed the moral, civic, and democratic development of university students. In her classic research, Colby (Colby 2014) began by presenting a diagnosis of moral education at the university level in the United States and recognized that students begin their university studies with a basic sense of justice developed within their own communities. Starting from that point, the university provides them with a significant opportunity to develop their moral judgment, motivation, and practical skills, during these years of study, as they debate moral issues with other people and develop their moral judgment by taking other people's interpretations seriously. Likewise, curricular and extracurricular university education modifies their attitudes and values and, by cultivating their deliberation skills, they enhance their motivation for action (Colby 2014). Notwithstanding the latter, Colby also indicates that, according to empirical evidence and despite the benefits for moral development provided by the university experience, the majority of university programs do not include activities aimed at moral learning, and the majority of university students are not able to advance beyond the conventional stage of moral development according to the Kohlberg scale (Stage 4). For

that reason, Colby recognizes that there is still a need to intervene in university education in order to promote the moral development of students.

Lind (Lind 2019; Lind 2015; Lind 2000) agrees with Colby, recognizing the importance of interaction and deliberation with other people in supporting moral development at university, but also suggests that it is possible to find progress or setbacks in moral development according to the type of education received. A variety of studies have confirmed these possibilities for progress or setback at university among students from medicine, economics, psychology, and education programs (Schillinger 2006; Comunian & Gielen 2006; Lind 2015). As for identifying the educational factors that favor moral competence development, these studies agree in highlighting Responsibility Taking (RT) and Guided Reflections (GR) opportunities. RT is defined as “taking responsibilities through active participation in different experimental and real-life settings” (Schillinger 2006, 40) and GR is defined as a “supportive and challenging process of reflection about those activities” (Schillinger 2006, 40). An example of an RT opportunity in a university context is to be a tutor to younger students in basic subjects. An example of GR in this case would be receiving support from a professor when facing questions as a tutor.

Lind (Lind 2019; Lind, 2000) recognizes that participating in RT activities contributes to moral development. Nevertheless, he clarifies that these experiences, in order to be effective, require participants to have a minimum prior level of moral development. In order to achieve that, Sprinthall (Sprinthall 1994) states that, especially in the youngest students, GR experiences that enable them to take further steps towards active participation are necessary. If participants do not have this minimal moral development level, Lind (Lind 2000) suggests that they will avoid participating in situations that challenge their own orientations. Thus, they would miss opportunities for exchange and debate that could have contributed to their moral development. Similarly, pressing students into situations of Guided Reflection without opportunities for Responsibility Taking could inhibit students' moral development.

Following this reflection, Comunian and Gielen (Comunian & Gielen 2006) analyzed the effects of an intervention with university students in Italy in which they offered prepared experiences for Responsibility Taking and Guided Reflection. As a result, the experimental group displayed progress in its moral competence in comparison with the control group. Schillinger (Schillinger 2006), in turn, researched the relationship between Responsibility Taking and Guided Reflection opportunities among university students from different degree programs in Germany, Switzerland, and Brazil. It was consequently concluded that students reporting greater RT and GR opportunities had significantly higher moral competence than those reporting fewer opportunities. Additionally, the study showed the positive influence of these opportunities throughout different years of study, resulting in greater moral competence development during university experience in those students who made use of these kinds of opportunities offered during their degree programs.

Previous research (Comunian & Gielen 2006; Nucci 2016; Bataglia, Alves, & Parente 2024) also assessed the level of influence of different factors, such as academic and extra-academic activities, and demographic data on moral reasoning and on moral-competence development. The present study evaluates the relationship between some of those factors and promoting the moral competence of teacher education students during their university studies. The present study advances the hypothesis that students with more RT and GR opportunities will show a positive difference in moral competence development compared with those with fewer RT and GR opportunities.

## **IV. Methodology and Procedures**

### **IV.1. Participants and Procedure**

The present study is part of a long-term research project that was conducted between 2017 and 2022 in Chile. The sample reported here was consisted of 671 pedagogy students from three Chilean universities in 2017 belonging to the Chilean University Chancellors' Council (CRUCH),<sup>2</sup> and was selected based on their ease of access. Among the participants, 68.6% were female and 31% were male, and three did not indicate their gender. At the time of the study, 60.8% of the sample were in their first year of study, and 29.1% in their last year. 68 participants (10.13%) reported being in the intermediate years of their degree programs.

As for subject-area specialization, students were divided into three groups: 36.51% were from Primary Education (PE), 37.11% from Humanities (History and Philosophy education) and Language for Secondary Education (HL), and 26.38% were from the area of Mathematics and Sciences for Secondary Education, including Biology, Chemistry, and Physics education (MSc). Students from the aforementioned groups in their first and last years of study were selected and contacted directly in their classrooms during academic activities between May and June 2017, in the three universities, enabling cross-sectional analyses of the data.

The researchers and trained assistants invited students to participate anonymously through informed consent, which was approved by the university's Ethics Committee. The contacted students who agreed to participate completed the questionnaires personally, with pencil and paper, within approximately 30 minutes, in classrooms.

### **IV.2. Materials**

The following three questionnaires were consecutively applied to the sample in

---

<sup>2</sup> The CRUCH is the organization comprising the 30 public and private universities in Chile that stand out for their tradition and quality of education. Compared with the other universities, admission to these universities requires higher scores in the national university assessment test (PSU). PSU refers to the Chilean university admission test.

only one face-to-face session<sup>3</sup>:

- For *Moral Competence*: The Moral Competence Test (MCT, previously known as Moral Judgement Test, MJT), designed by Georg Lind, was used to measure it. This was, for a long time, the second most used test for measuring moral judgment, according to a review of moral education research over forty years (Lee & Taylor 2013). The test comprises two dilemmas and twenty-six questions. The first dilemma involves workers in a company. Based on the story, participants are asked to indicate their level of agreement with the main character's decision on a Likert scale, from -3 to +3 (including 0). Afterwards, they are asked to state their level of agreement with 12 different statements on a scale from -4 to +4 (including 0). Six of these statements represent arguments supporting the main character's decision, while the remaining six are arguments against it. On the second page, a second dilemma is presented regarding a medical-ethical issue, with questions in the same format as the previous one. Following Lind (Lind 2015), MCT is an experimental questionnaire since the participant is asked to react to a task within the test. The questionnaire constructs an index for measuring moral competence, referred to as the C-Score. The C-Score is calculated with an algorithm which considers the answers to the 24 statements in terms of their level of agreement with the presented supporting and dissenting arguments. This algorithm is sensitive to the answers to both dilemmas, relating them to the judgment of the quality of the arguments presented in favor of or against the decision in each story. The C-Score theoretically ranges from 0 to 100, although empirically speaking, it rarely goes beyond 40 points. Results are categorized as follows: very low (indexes from 0 to 9), low (10-19), medium (20-29), high (30-39), very high (40-49) and extraordinarily high (over 50) (Lind 2008). A Spanish version of the MCT was used, translated by Trechera and Moreno (Lind 2006) and further validated for Chilean Spanish by Meza (Meza & Guerrero 2016).

- For *Learning Environment*: The ORIGIN/u questionnaire was used to evaluate the learning environment of university students (Schillinger-Agati & Lind 2002)<sup>4</sup>. The version used in the present study was developed based on a translation and adaptation of the original Portuguese and German versions available in Schillinger (2006)<sup>4</sup>. This instrument asks the participants to assess the RT and GR opportunities offered in their mandatory and optional subjects during their university studies. It then asks about their engagement in activities outside the university, such as music, cultural, political, and religious groups, the responsibilities undertaken, and the support received. Using

---

3 The MCT and the ORIGIN/u Tests were provided by Prof. Dr. Georg Lind to the corresponding author to be used in the current investigation.

4 The ORIGIN/u instrument's translation and validation were done at the beginning of this research. One of the researchers made a first translation into Spanish, which was then revised in terms of language by a team of specialized professors. This version was subsequently applied to a pilot sample of 15 students from one of the participating universities using the technique of answering aloud. Based on this procedure, the observations and questions made by the participants regarding the instruments were integrated. A final version of the ORIGIN/u instrument was developed based on these observations, which was used for this study. The reliability of the indicators was assessed, resulting in favorable Cronbach's alpha coefficients for each case (RT alpha =.86, GR alpha =.88).

these questions, the instrument constructs the RT and GR indicators, with values ranging from 1 to 3. The answers were afterwards coded in an ordinal variable according to the reported RT and GR levels, following the instrument's recommendations for university students. This variable distinguishes between favorable (for high levels of RT and GR) and unfavorable learning environments (for low levels of RT and GR), using the second-quartile criterion as the threshold. The instrument also allows to compute the degree of involvement in RT and GR opportunities according to the number of people participating in them.

- For *Academic and Demographic Features*: Open-ended questions were included in the questionnaire in order to record the age, gender, study year, endorsement area, and the score in the national university admission test, called PSU.<sup>5</sup> The university admission test scores range from 100 to 800 points and it is administered by the Chilean University Chancellors' Council. It is widely used as a proxy for the education level attained by university students at the end secondary school. In order to define the years of study, students were asked to report which semester of their program they were enrolled in and their answers were coded into three categories: first year, last year, and other.

#### **IV.3. Design**

This study has a non-experimental, cross-sectional design, replicating the design used by Schillinger (2006), inspired by Kohlberg (Kohlberg 1966/2008), and applied to teacher education. The dependent variable is moral competence, measured by the C-Score through the MCT. The predictor variables are: the level of education before entering university (as measured by the PSU); learning environment (favorable or unfavorable, as measured by ORIGIN/u); time for learning (first and last year of study); and the specialization (PE, HL and MSc). Together with them, the following sociodemographic variables were added: gender (male and female), age, the type of administration of the school of origin (private, charter, and public), and the level of education of the parents.

## **V. Findings**

The results of the analyses are presented in this section as follows. After presenting the results of the measured level of moral competence, the correlation level between moral competence and PSU is reported. Then, the analysis shows the results controlling the independent variables *learning environment* and *years of study*, irrespective of the specialization (Figure 1). Afterwards, the variable *specialization* is included (Figure 2) and the relation between moral competence with the other dimensions of the ORIGIN/u questionnaire is shown. Later, an analysis of differences in the demographic questions with respect to moral competence is presented, and finally, the degree of student involvement in RT and GR opportunities, differentiated by the *specialization*, is shown.

The C-Score average for the whole sample is 19.36. The PSU is positively and

statistically correlated with the C-Score ( $r=.12$ ;  $p<.01$ ). For that reason, the PSU variable was included in the following analyses as a covariate. When comparing the average moral competence of the last year students with the first-year students, and not controlling for learning environment, no differences were found ( $r=.0215$ ;  $F(1,577)=.288$ ;  $p=.633$ ).

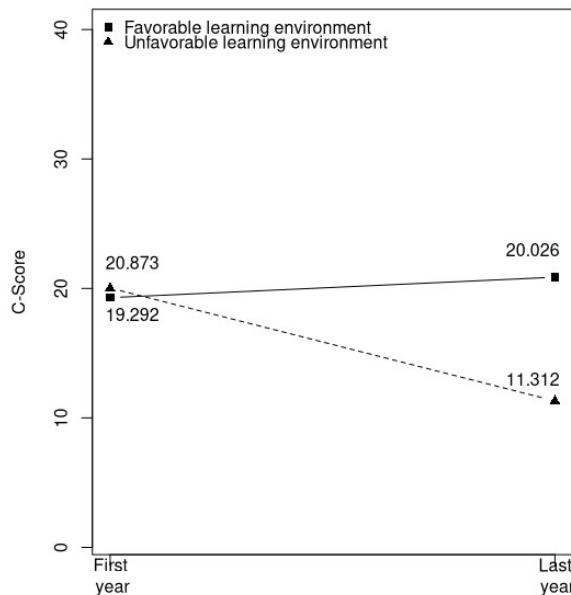


Figure 1: Moral competence by learning environment and year of study.

Figure 1 depicts the level of moral competence for first- and last-year students, differentiated according to their learning environment. Students in the final year who perceive a favorable learning environment have, on average, 8.7 more C-Score points than those who perceive their learning environment as unfavorable. Results from a two-factor analysis of variance show that the interaction between the variables *years of study* and *learning environment* is statistically significant ( $F(1,145)=2.808$ ;  $p=.09$ ) with a medium effect size ( $d=.629$ ;  $r=.300$ ). This suggests a positive relationship between *years of study* and *learning environment* and moral competence.

Figure 2 displays two graphs showing the level of moral competence for first- and last-year students in different *specializations*, under two types of learning environments. The graph on the left shows the C-Score results by *year of study* and *specialization* in a favorable learning environment. The graph on the right shows the results for an unfavorable learning environment. As shown in the left graph in Figure 2, PE and HL students in a favorable learning environment exhibit higher C-Scores when comparing their final and first years of study, increasing by roughly 2 to 2.5 C-points, whereas MSc students show a decrease of about 5.5 C-points. On the other hand, as shown in the right graph in Figure 2, PE students remain almost stable, while HL and MSc students with an unfavorable learning environment show markedly lower C-Scores in their final year.

(reductions of about 13 and 17 points, respectively). When comparing favorable with unfavorable learning environments, PE students present a small positive difference of 2.75 points (absolute effect-size) in their moral competence between the last and the first year of study, with a small relative effect-size ( $r=.227$ ). A two-factor analysis of variance was not significant.

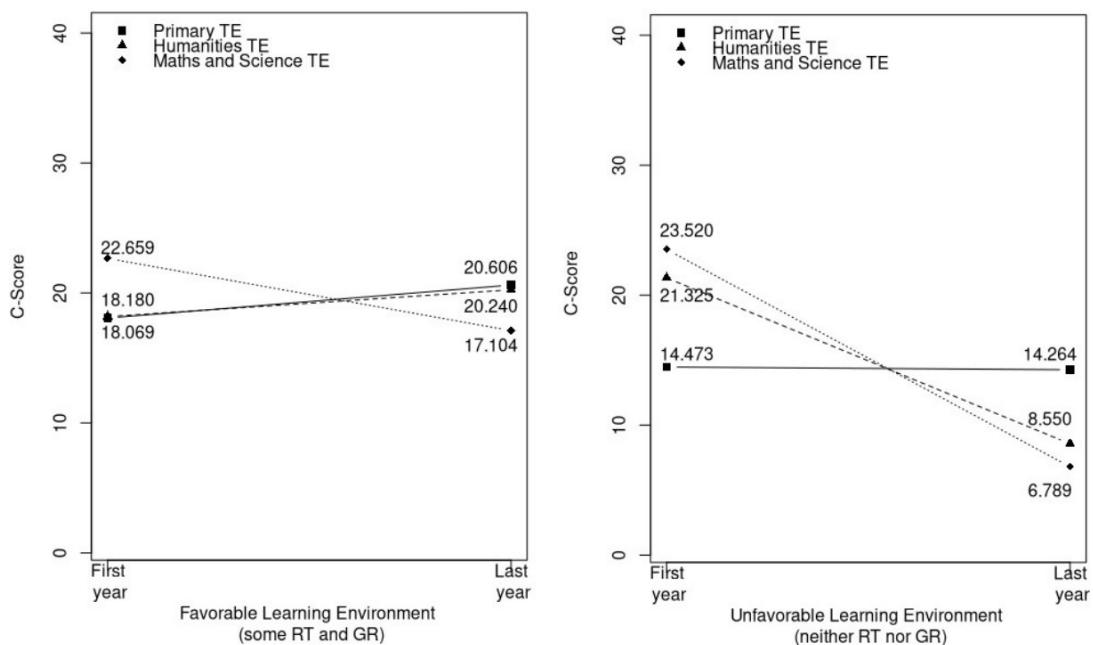


Figure 2: Moral competence by learning environment, year of study, and specialization.

The MSc students who reported a favorable learning environment showed a decrease in moral competence in the last year by approximately 5.56 C-points compared with their first study year. Students with an unfavorable learning environment showed a much larger decrease, of approximately 16.7 C-points. Although comparisons between favorable with unfavorable learning environments for HL and MSc students show substantially lower levels for the unfavorable group, the small subgroup of students reporting this learning condition in the ORIGIN/u questionnaire makes an analysis of variance unreliable.

Regarding the other dimensions of the ORIGIN/u questionnaire, participation as tutors in basic subjects shows a positive correlation with the moral-competence levels ( $r=.130$ ;  $p=.015$ ). However, the active participation in political parties within the university is negatively correlated with the development of moral competence ( $r=-.205$ ;  $p=.044$ ). Both differences are statistically significant. With respect to demographic variables, women did not show any significant difference in moral competence compared with men. Age also did not correlate with moral competence. The school of origin, on the other hand, showed a significant correlation with moral competence. Students from a private or charter school of origin had, on average, higher moral competence compared with students from public schools, with a small effect size ( $r=.209$  and  $r=.121$ , respectively).

Students whose fathers had university education showed significantly higher moral competence than their peers ( $r=.27$ ;  $p=.004$ ).

The overall degree of involvement in RT and GR opportunities was 70% for the whole sample. When broken down by specialization, the higher rate of involvement was among primary school teacher education students (80%), followed by humanities and language teacher education students (70%), and finally by the mathematics and sciences teacher education students (60%).

## VI. Discussion

The present study analyzed the effects of some aspects of the learning environment on the development of moral competence among teacher education students from three different endorsement areas, replicating the design used by Schillinger (Schillinger 2006) for other degree programs. With a cross-sectional design, first- and last-year students were compared in terms of their level of moral competence, considering different learning environments in relation to the RT and GR opportunities as reported by the students.

The overall C-Score average for the sample is considered low according to the scale presented by Lind (Lind 2010). Compared to previous studies, this result is similar to the level of moral competence found in Meza and Guerrero (Meza & Guerrero 2016) among primary school teacher education students in Chile, and also similar to the level of moral competence found in Brazil among psychology, business administration, and medical students (Schillinger 2006). However, these results are lower than the average found in Germany and Switzerland by Schillinger for psychology, business administration, and medical students, which were considered high on the same scale. Compared to a more recently study of physical education teacher education students in Poland (Bronikowska & Kroc 2019), the level of moral competence in the present study is higher. Low levels of moral development among teachers and teacher education students have also been found in previous studies, as reported by Cummings and colleagues (Cummings, Harlow, & Maddux 2007).

The positive influence of the level of education and the kind of educational activities (Colby 2014; Lind 2019) on moral development – rather than a natural maturation process or the age, as suggested by Kohlberg (Kohlberg 1984) 40 years ago, is expressed in the positive correlation of the C-Score with the national university admission test (PSU), also found by Meza and Guerrero (Meza & Guerrero 2016), and with the type of administration of the participants' schools of origin (private versus public). Also, more recent studies support this positive relation between education and moral development (Wei-Lin Chen & Yun-Wen Chan 2020; Osezua et al. 2022).

Comparing the average moral competence of final-year students with first-year students, and without controlling for the learning environment, no differences were found. A medium effect size was found, however, for the students reporting a favorable learning

environment compared with those reporting an unfavorable learning environment in their last year of study (see Figure 1). Similar results were found by Schillinger (2006) for medical, psychology, and business administration students, and for Pascarella and Terenzini (Pascarella & Terenzini 2005). These results support the theory of a positive influence of a learning environment with RT and GR opportunities on moral development (Lind 2019; Sprinthall 1994), as may be observed when students debate with others at college, as Colby pointed out (Colby 2014).

Primary school teacher education students however did not show any significant effect size when compared only by year of study, but did present a small positive effect size when controlled by the learning environment, although not statistically significant. The level of involvement in RT and GR opportunities was 80% in this specialization, which is considered high according to the criteria proposed by Schillinger (2006). These results are similar to those found for psychology students, suggesting a positive influence of the level of involvement in RT and GR learning opportunities on the development of moral competence, which is also in line with previous studies (Rest & Narvaez 1991; Rest, Narvaez, Thoma, & Bebeau 2000). A similar situation was found for teacher education students in humanities and language. While there was no observed effect of the variable *year of study* on moral competence (see Figure 2), without considering other variables, there was a positive effect when the learning environment was also taken into account. However, the small number of students for this specialization who experienced an unfavorable learning environment in the last study year made it impossible to conduct further analyses for this subgroup.

The mathematics and sciences teacher education students showed a negative difference in their moral competence when comparing the last and first year of study, with a small negative effect size. For this specialization, both students reporting a favorable and those reporting an unfavorable learning environment showed a negative difference. The degree of involvement in RT and GR opportunities for these students was 60%, which is considered low according to Schillinger; a similar situation was found among business administration and medicine students (Schillinger 2006), where the degree of involvement was also low. This condition can be considered a relevant factor when the degree of moral development decreases, supporting the theory of Rest and Narvaez (Rest & Narvaez 1991), who differentiated the degree of moral development according to the level of involvement in learning opportunities.

Schillinger (2006) extensively discussed the particular issue of a reduction in moral competence among medical students during university. Compared with findings from other studies of medical education students, the author suggested that, among other factors, the extremely high workload of medical education students could explain this decrease. Similarly, for mathematics and science teacher education students, the curriculum is very intensive, with many more subjects related to these specializations than those dedicated to pedagogical knowledge. At the three universities participating in

the present research, most of the subjects for these specializations are also shared with students of other degree programs, such as biology, chemistry, physics, or engineering, with a high level of rigor. Further studies should examine the factors within the study years that could explain the negative difference in moral competence for students that showed, on average, the highest levels in the first year but the lowest in the last years, both in favorable and unfavorable learning environments (Figure 1).

In line with other studies (Lind 2019; Schillinger 2006), no statistically significant differences in terms of gender were found. Also, no statistically significant difference was found between students who had a job during their studies and students who did not, as also observed by Schillinger (cf. 2006).

Regarding other activities during the study years, the positive influence of participating as a tutor confirmed the findings on previous studies, as in Schillinger (cf. 2006) or in Rest and Narvaez (Rest & Narvaez 1994). However, participation in extra-curricular activities did not show any positive effect on Chilean students, as it did for German-speaking students. Even more, the small negative difference associated with participation in political parties during the study years is remarkable, which suggests the need to pay attention to the current kind of political participation at universities in Chile.

## **VII. Conclusions**

Teacher education needs to focus on the moral development of their students in order to prepare them for the moral dilemmas encountered in this profession. The main purpose of this study was to explore the relationship between the learning environment during university studies and the development of moral competence among teacher education students. The design replicated the one used by Schillinger (Schillinger 2006), inspired by Kohlberg (Kohlberg 2008), to compare first- and last-year students in a cross-sectional setting, and was applied to pedagogy degree programs. The present results suggest a partial influence of RT and GR opportunities on achieving a higher level of moral competence. In groups with a favorable learning environment, with more RT and GR opportunities, higher moral competence levels were found, whereas groups with an unfavorable learning environment – that is, with too few of these opportunities – show lower levels of moral competence. The three different specializations studied showed distinct learning environments. One clear example of a positive difference in moral competence was observed among the group of students who participated as tutors during university studies. Conversely, the group of students who participated in political parties at the university showed a lower level of moral competence compared to other students who did not participate in them. The degree of involvement in learning opportunities is also identified as an important factor related to a positive difference in moral competence. The present results suggest the influence of active, experienced-based learning opportunities on producing moral-competence levels.

The attempt to discuss the role of teacher education in their moral development is a pressing issue that requires attention, as Orchard (see Orchard 2021) notes, because the mere participation in college or university does not necessarily imply moral development. According to the learning opportunities available, this competence may be fostered or hindered in its development, as the present study suggests. The opportunities for RT and GR, together with a high degree of involvement in those activities, appear to be relevant to the positive difference in moral competence among students during the university years. More opportunities, such as teaching other students or helping with research projects, together with the possibility of seeking advice from more experienced peers or instructors, could foster the moral competence of students, as they provide occasions for moral reflection and may be considered positive experiences during university years. It is therefore suggested that such activities should be included in the teacher education curriculum.

## **VIII. Limitations**

The present research uses a cross-sectional design and has some limitations, as it simultaneously collects data from the first and last years of study. In order to study the development of moral competence during teacher education programs, it would be interesting to apply a longitudinal approach to the same theme as that examined in the long-term study. Regarding the sample, it is limited to three of the main universities within the Chilean University Chancellors' Council (CRUCH), which select students with the highest scores on the national university admission test (PSU). It would be interesting to include universities with fewer admission barriers in future research, as Schillinger (2006) did, distinguishing between competitive and non-competitive universities. As for the size of the sample and the sampling process, although a more than 600-person sample enables estimating correlations, the subgroup of students reporting unfavorable conditions in the last years of their degree programs in each endorsement area was too small to carry out further analysis, as well as to find more statistically significant results. As a consequence, it is suggested to increase the sample size. The sampling process was non-probabilistic, which does not permit assessing the statistical representativeness of the results for students who did not participate in this study. This limitation could be overcome with randomized sampling.

## References

Bataglia P, Alves C, & Parente E. 2024. *Studies on Moral Competence. Proposals and Dilemmas for Discussion*. Springer Nature Switzerland AG. <https://doi.org/10.1007/978-3-031-52139-3>

Bronikowska M. & Kroc A. 2019. "The Level of Moral Competences of Pre-service PE Teachers – A Reason to Worry?" *Biomedical Human Kinetics* 11(1):19–27. <https://doi.org/10.2478/bhk-2019-0003>

Colby A. 2014. "Fostering the Moral and Civic Development of College Students," in L. Nucci & D. Narvaez (Eds.), *Handbook of Moral and Character Education*. Routledge. <https://doi.org/10.4324/9781003374077>

Comunian A. L. & Gielen U. P. 2006. "Promotion of Moral Judgement Maturity through Stimulation of Social Role-taking and Social Reflection: An Italian Intervention Study," *Journal of Moral Education* 35(1):51–69. <https://doi.org/10.1080/03057240500495302>

Cooper P. 2021. "Teaching as a Moral Act: Vivian Paley and a Manifesto of Children's Rights in the Early Childhood Classroom," *Schools: Studies in Education* 18(2):285–300. <https://doi.org/10.1086/716626>

Cummings R., Harlow S., & Maddux C. D. 2007. "Moral Reasoning of In-service and Pre-service Teachers: A Review of the Research," *Journal of Moral Education* 36(1):67–78. <https://doi.org/10.1080/03057240601185471>

Curren R. 2014. "Motivational Aspects of Moral Learning and Progress," *Journal of Moral Education* 43(4):484–499. <https://doi.org/10.1080/03057240.2014.935306>

Desplaces D., Melchar D., Beauvais L., & Bosco S. 2007. "The Impact of Business Education on Moral Judgment Competence: An Empirical Study," *Journal of Business Ethics* 74:73–87. <https://doi.org/10.1007/s10551-006-9221-3>

Durkheim E. 1968 (1925<sup>1</sup>). *Moral Education. A Study in the Theory and Application of the Sociology of Education*. Los Angeles, CA: The Free Press.

Ehrich L. C., Kimber M., Millwater J., & Cranston N. 2010. "Ethical Dilemmas: A Model to Understand Teacher Practice," *Teachers and Teaching: Theory and Practice* 17(2):173–185. <https://doi.org/10.1080/13540602.2011.539794>

Enderle C., da Silveira R., Dalmolin G., Lunardi V., Avila L., & Dominguez C. 2018. "Teaching Strategies: Promoting the Development of Moral Competence in Undergraduate Students," *Revista Brasileira Enferm* 71(4):1650–1656. <https://doi.org/10.1590/0034-7167-2017-0704>

Harant M. & Schreiber F. 2021. "Overcoming Ethos-ethics in Teacher Education? Ethos-ethics As the Unfulfilled Project of Modern Pedagogy," in F. Oser et al. (Eds.), *The International Handbook of Teacher Ethos. Strengthening Teachers, Supporting Learners*. Cham: Springer Nature Switzerland AG. URL: <https://link.springer.com/book/10.1007/978-3-030-73644-6>

Holtz P. 2013. "Teaching Cyberethics: Value Orientations as Predictors of the Acquisition of Moral Competence in a Course on the Social Consequences of Information Technology," in K. Beycioglu (Ed.), *Ethical Technology Use, Policy, and Reactions in Educational Settings* (pp. 56–69). IGI Global. <https://doi.org/10.4018/978-1-4666-1882-4.ch005>

Kohlberg L. 1958. *The Development of Modes of Moral Thinking and Choice in the Years Ten to Sixteen*. [Unpublished doctoral dissertation]. University of Chicago.

Kohlberg L. 1964. "Development of Moral Character and Moral Ideology," in M. L. Hoffman & L. W. Hoffman (Eds.), *Review of Child Development Research*, Vol. 1 (pp. 381–431). New York: Russel SAGE Foundation.

Kohlberg L. 1973. "Continuities in Childhood and Adult Moral Development Revisited," in P. B. Baltes & K. W. Shaie (Eds.), *Life-span Developmental Psychology: Personality and Socializaton* (pp. 179–204). Cambridge, Mass.: Academic Press.

Kohlberg L. 1984. *The Psychology of Moral Development*, Vol. 2. New York: Harper & Row.

Kohlberg L. 2008. "The Development of Children's Orientations toward a Moral Order: I. Sequence in the Development of Moral Thought," *Human Development* 51(1):8–20.

Kohlberg L., Power C., & Higgins A. 2009. *La educación moral según Lawrence Kohlberg*. Barcelona – Buenos Aires – Mexico City: Gedisa.

Kultusministerkonferenz 2014. *Standards für die Lehrerbildung: Bildungswissenschaften*. (Beschluss der Kultusministerkonferenz vom 16.12.2004 i. d. f. vom 12.06.2014). Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland.

Lajciakova P. 2013. "Social Work Students' Moral Judgement Competence," *Czech and Slovak Social Work* 13(5):51–56. URL: <https://socialniprace.cz/en/article/social-work-students-moral-judgement-competence-2/>

Lee C. & Taylor M. 2013. "Moral Education Trends over 40 Years: A Content Analysis of the Journal of Moral Education (1971–2011)," *Journal of Moral Education* 42(4):399–429. <https://doi.org/10.1080/03057240.2013.832666>

Lind G. 1984. "Change or Development? A Comparision of Two Paradigms of Viewing the Outcomes of Education," in Idem (Ed.), *Morality, Cognition, Education* (pp. 53–67). University of Konstanz, Sozialwissenschaftliche Fakultät.

Lind G. 2000. "The Importance of Role-Taking Opportunities for Self-Sustaining Moral Development," *The Journal of Educational Research* 10(1):9–15. URL: [https://www.eeraorganization.org/\\_files/ugd/baaa29\\_fd3f3d61fb544ae3a47b1b9431c4e215.pdf](https://www.eeraorganization.org/_files/ugd/baaa29_fd3f3d61fb544ae3a47b1b9431c4e215.pdf)

Lind G. 2003. *Moral ist lehrbar*. München: Oldenbourg.

Lind G. 2006. *Test de Juicio Moral*. Trans. J. L. Trechera & C. Moreno. (C) Georg Lind International Copyright.

Lind G. 2008. "The Meaning and Measurement of Moral Judgment Competence Revisited – A Dual-Aspect Model," in D. Fasko & W. Willis (Eds.), *Contemporary Philosophical and Psychological Perspectives on Moral Development and Education* (pp. 185–220). New York: Hampton Press.

Lind G. 2010. "The Theory of Moral-Cognitive Development: A Socio-Psychological Assessment," in G. Lind, H. A. Hartmann, & R. Wakenhut (Eds.), *Moral Judgment and Social Education*, 2<sup>nd</sup> Ed. (pp. 21–53). Milton Park: Taylor and Francis.

Lind G. 2015. "Favorable Learning Environments for Moral Competence Development – A Multiple Intervention Study with Nearly 3000 Students in a Higher Education Context," *International Journal of University Teaching and Faculty Development* 4(4):1–28.

Lind G. 2019. *How to Teach Moral Competence*. Berlin: Logos.

Martins V., Santos C., Bataglia Unger P., & Duarte I. 2021. "The Teaching of Ethics and the Moral Competence of Medical and Nursing Students," *Health Care Analysis* 29:113–126. <https://doi.org/10.1007/s10728-020-00401-1>

Meza Pardo M. & Guerrero Chinga A. 2016. "Competencia moral-democrática en futuros profesores de Pedagogía en educación básica en Chile ¿Importa la formación inicial docente?", *Perfiles Educativos* 38(154):41–56. <https://doi.org/10.22201/iisue.24486167e.2016.154.57652>

Ministry of Education (Ministerio de Educacion) 2021. *Estandares de la profesion docente. Marco para la buena enseñanza*. Ministerio de Educación, Chile. Retrieved March 12, 2022 from <https://estandaresdocentes.mineduc.cl/wp-content/uploads/2021/08/MBE-2.pdf>

National Board for Professional Teaching Standards 2022. *Five Core Propositions*. NBCTS. Retrieved March 12, 2022 from <https://www.nbpts.org/certification/five-core-propositions/>

Nucci L. 2016. "Recovering the Role of Reasoning in Moral Education to Address Inequity and Social Justice," *Journal of Moral Education* 45(3):291–307. <https://doi.org/10.1080/03057240.2016.1167027>

Orchard J. 2021. "Moral Education and the Challenge of Pre-service Professional Formation for Teachers," *Journal of Moral Education* 50(1):104–113. <https://doi.org/10.1080/03057240.2020.1763932>

Osezua O., Bockarie A., Breakey J., Arogundade E., Nyamnjoh A., & Swartz S. 2022. "Cultivating Moral Eyes: Bridging the Knowledge-Action Gap of Privilege and Injustice among Students in African Universities," *Journal of Moral Education* 51(2):186–203. <https://doi.org/10.1080/03057240.2020.1812552>

Pascarella E. T. & Terenzini P. 2005. *How College Affects Students: A Third Decade of Research*, Vol. 2. San Francisco – Hoboken, NJ: Jossey-Bass.

Piaget J. 1932/1975. *The Moral Judgment of the Child*. Abingdon, UK: Routledge and Kegan Paul.

Rest J. R. & Narvaez D. 1991. "The College Experience and Moral Development," in W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of Moral Behavior and Development*, Vol. 2 (pp. 229–245). Mahwah, NJ: Erlbaum.

Rest J., Narvaez D., Thoma S., & Bebeau M. 2000. "A Neo-Kohlbergian Approach to Morality Research," *Journal of Moral Education* 29(4):381–395. <https://doi.org/10.1080/713679390>

Rest J. & Narvez D. 1994. *Moral Development in the Professions: Psychology and Applied Ethics*. Mahwah, NJ: L. Erlbaum Associates.

Ronkainen R., Kuusisto E., Eisenschmidt E., & Tirri K. 2021. "Ethical Sensitivity of Finnish and Estonian Teachers," *Journal of Moral Education* 52(2):172–188. <https://doi.org/10.1080/03057240.2021.1960491>

Sanger M. & Osguthorpe R. (Eds.) 2013. *The Moral Work of Teaching and Teacher Education: Preparing and Supporting Practitioners*. New York: Teachers College Press.

Schillinger-Agati M. & Lind G. 2002 (November 6-10). *Learning Environment at University Level: ORIGIN/u (Questionnaire for Assessing Opportunities for Role-taking and Guided Reflection at the University). Newly Updated and Validated Versions*. Conference session, 28<sup>th</sup> Annual Meeting of the Association for Moral Education, Chicago, IL.

Schillinger M. 2006. *Learning Environment and Moral Development: How University Education Fosters Moral Judgement Competence in Brazil and Two German-speaking Countries*. Aachen: Shaker Verlag.

Shapira-Lishchinsky O. 2010. "Teachers' Critical Incidents: Ethical Dilemmas in Teaching Practice," *Teaching and Teacher Education* 27(3):648–656. <https://doi.org/10.1016/j.tate.2010.11.003>

Souza E. S., Serafim M. C., & Santos L. S. A 2019. "Contribuição do ensino de ética no desenvolvimento da competência moral de discentes em administração pública", *Arquivos Analíticos de Políticas Educativas* 27(104):1–27. <https://doi.org/10.14507/epaa.27.4088>

Sprinthall N. A. 1994. "Counseling and Social Role-taking: Promoting Moral and Ego Development," in J. Rest & D. Navaez (Eds.), *Moral Development in the Professions: Psychology and Applied Ethics* (pp. 85–99). Erlbaum.

Tello D., Meza M., & Retamal J. 2018. *Informe final. Análisis de la influencia de factores curriculares y demográficos en el desarrollo de la competencias moral democrática en futuros profesores*. (Publication No. FX11676). Ministerio de Educación Chile, División de planificación y presupuesto, Departamento de Estudios y Desarrollo, Fondo de Investigación y Desarrollo en Educación. URL: <https://bibliotecadigital.mineduc.cl/bitstream/handle/20.500.12365/18849/E18-0030.pdf>

Tezcan G. & Guvenc H. 2020. "Middle School Teachers' Professional Ethical Dilemmas," *Pamukkale University Journal of Education* (49):439–460. <https://doi.org/10.9779/pauefd.588753>

Ulvik M., Smith K., & Helleve I. 2017. "Ethical Aspects of Professional Dilemmas in the First Year of Teaching," *Professional Development in Education* 43(2):236–252. <https://doi.org/10.1080/19415257.2016.1178163>

Wei-Lin Chen & Yun-Wen Chan 2020. "Can Higher Education Increase Students' Moral Reasoning? The Role of Student Engagement in the U.S.," *Journal of Moral Education* 51(2):169–185. <https://doi.org/10.1080/03057240.2020.1806045>