

# Knowledge

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# 1 **Effect of Tacit Knowledge on Student Self-Determination in**

## 2 **Indonesia: A Mixed-Methods Study**

### 3 **Abstract**

4 This study was initiated in response to the condition of students' low self-determination, which  
5 results in an inability to complete tasks well, a low achievement index, and even congestion  
6 and dropout. The research employed a mixed methodology with a concurrent embedded design  
7 and a selection without random assignment. The participants of this study were 406  
8 undergraduate students in Indonesia, with 38 experimental and control participants,  
9 respectively. The self-determination instrument refers to the theory of Ryan and Deci, which  
10 was analyzed using the Rasch Model, and the effectiveness test used the Mann-Whitney Test.  
11 The results showed the impact of the identified regulation level that the focus of learning in  
12 higher education was successful in developing cognitive, affective, and psychomotor aspects  
13 but still needs to reach the development of students' self-determination dimension. The tacit  
14 knowledge model has advantages in the learning process that can be attached to all courses that  
15 can produce useful output products.

16 **Keywords:** Guidance and Counseling, Rasch Model, Self Determination, Tacit Knowledge.

### 17 **Introduction**

18 The basic consideration of the first tacit knowledge guidance is the development of self-  
19 determination to increase intrinsic motivation (building self-determination). There is a  
20 regulatory style that is arranged on an internalization continuum line, which represents the  
21 more capable of internalizing their extrinsic motives, so students have higher autonomy and  
22 connectedness.

23 The second consideration of tacit knowledge is the tendency to behave and behave in the  
24 environment, students who have an autonomous orientation are more directed to interest in and  
25 appreciate activities, students who have a control orientation are more towards rewards and  
26 benefits that will be received in carrying out their activities, and students who have an  
27 impersonal orientation more leads to anxiety about competence in carrying out its activities.

28 The development of self-determination plays an essential role in the process of achieving  
29 happiness [1], well-being [2], [3][3][3][3][3]implicit intelligence [3], increasing motivation  
30 at work [4], positive relationships with students and other people [5], having implications for  
31 high self-motivation, internal locus of control, interest, and integrativeness in students, as well  
32 as decreasing the level of anxiety and learning helplessness [6]. Nevertheless, weak self-  
33 determination impacts the psychology of individuals in experiencing frustration [6], depression  
34 [7], anxiety, anger, bullying [8], and dropout [9, 10].

35 Research results from the American College Health Associations [9]–[11] stated that out  
36 of 97,357 students, 32% of students had low self-determination, marked by students being  
37 unable or unsuccessful in completing academic activities. This is supported by the results of  
38 the study [12], which described that 108 of 463 students had the weakest competence and  
39 relatedness. It was predicted that students would experience study delays and even drop out.  
40 The students' weak self-determination, if left unchecked, will lead the students to experience  
41 the risk of dropout, anger, bullying, frustration, anxiety, depression, and suicide [6]–[8].

42 Data on Higher Education Statistics in 2019 showed that the percentage of dropouts in  
43 Indonesia was 7%, or as many as 602,208 students from a total of 8,483,213 students, and in

44 2020 were as many as 601,333 dropouts. Based on gender, male students dominated with as  
45 many as 370,322 students; meanwhile, women students were among as many as 231,011  
46 students. In addition, West Java province in Indonesia has a ratio value of 0.06, or a comparison  
47 of 6 students dropping out of college and one registered student.

48 Several studies explained that self-determination is correlated with leadership style,  
49 teacher and student perceptions, teaching styles [13], teaching strategies [14], Academic  
50 Achievement, work ethic, student interests, academic success, public service, children's  
51 autonomy, physical education [15], Physical health[16]. Moreover, the latest research on self-  
52 determination correlates with neuroscientific variables [17], representing self-determination  
53 supported by the presence of mammals that have a search/exploration system and even the  
54 formation of the dopamine system, which is known as an essential neurotransmitter that  
55 transmits signals in the brain.

56 Various self-determination studies have been directed at differences in gender, differences  
57 in social status, economy, education, support from teachers, peers, and cultural contexts [18]–  
58 [20]. The results of the last 21 years of research on the development of self-determination have  
59 been more on academic and health variables. Health variables are widely studied by doctors,  
60 psychiatrists, and other professionals in the medical field, while academic variables are studied  
61 and developed by educators and psychologists.

62 According to Hein et. al [8], many studies have examined the academic variables, focusing  
63 on the correlation of teacher teaching styles that can control positive individual behavior and  
64 help students have optimal autonomous and independent behavior. The results of this study  
65 recommended further research on how educators carry out the learning process. Thus, the  
66 direction of research on the development of self-determination is more focused on academic  
67 variables, which are highly sustainable and unique variables for follow-up/development.

68 The basis for selecting the population and research sample in universities is according to  
69 the findings of a 21-year study where the tendency of research to develop self-determination  
70 in university students is rarely carried out. The most powerful strategies for developing  
71 individual self-determination are education, role models, and experience. The educational  
72 process develops individuals to have a more effective personal wholeness. Based on the results  
73 of the literature review, the latest research in developing self-determination are the ECED  
74 model, the ESEM (Exploratory Structural Equation Modeling) Model, the Clinical Based  
75 Learning Model, the Model of Participation and Performance Processes, Teaching Preferred  
76 and Non-Preferred Ways, Model for Interpersonal Teacher Behavior. It is clear that efforts to  
77 develop self-determination based on the most recent research results in the previous sub  
78 are more directed at learning models. The previous models are rooted in holistic models of  
79 knowledge creation, one of which is tacit knowledge that can be considered and reconstructed  
80 to become an integral part of philosophy.

## 81 **Materials and Methods**

### 82 **Research Design**

83 A mixed methods approach is used in this study to obtain a detailed understanding of students'  
84 self-determination and how tacit knowledge can improve their self-determination. The research  
85 design of implementation activities is within the framework of testing the effectiveness of tacit  
86 knowledge guidance through concurrent embedded design. The concurrent embedded design  
87 is used because this research will combine statistically significant and practically significant  
88 data simultaneously, and the results can be used to understand the research problem accurately.  
89 Combining two data using an embedded strategy that applies one stage of qualitative and

90 quantitative data collection at a time and the data obtained describe side by side two different  
91 analyses that represent a combined assessment of a problem.

## 92 **Participants**

93 The sample was drawn by a non-random convenience sample. Participants were sampled from  
94 a single university in West Java, consisting of 406 undergraduate students in the preliminary  
95 study, from which 38 of the data were used as groups to test effectiveness, with 19 students  
96 included in the experimental group and 19 students included in the control group. Before  
97 conducting the research, the researcher gave informed consent as a guarantee of confidentiality  
98 for the participants and also that participants could commit to participating in this study. The  
99 following is an explanation of the participants involved in this study.

100 **Table 1.** Number of Research Participants

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<b>Faculty</b>	<b>Total</b>		
<b>Preliminary Study and Service Test</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Faculty of Educational Science	7	78	85
Faculty of Mathematics and Sciences Education	5	35	40
Faculty of Language and Literature Education	17	40	57
Faculty of Social Science Education	23	63	86
Faculty of Technology and Vocational Education	10	66	76
Faculty of Sports and Health Education	46	16	62
<b>Total number</b>	<b>108</b>	<b>298</b>	<b>406</b>
<b>Effectiveness Test</b>			
Experimental Group	3	16	19
Control Group	2	17	19
<b>Total number</b>	<b>5</b>	<b>33</b>	<b>38</b>

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## 103 **Instrument**

104 This study uses three measuring tools consist of self-determination instruments,  
105 interviews, and observations. The concept of the self-determination instrument used to collect  
106 data on the six levels of self-determination, and three aspects based on the self-determination  
107 theory refers to [21] the instrument has been tested for validity and reliability in previous  
108 studies to examine the quality of the self-determination instrument use the Rasch model  
109 technique, which has detailed accuracy and is carried out repeatedly [22]–[24][25]. The  
110 preparation of the self-determination instrument uses an ordinal scale because it examines  
111 based on each aspect of self-determination and the level of the self-determination continuum.

112 The following details the levels of the six regulatory styles in the self-determination  
113 continuum. The level of amotivation is a condition of individual psychological dynamics that  
114 does not have a clear goal orientation. The level of external regulation is a condition of  
115 individual psychological dynamics to carry out ways of thinking and acting based on the urge  
116 to get rewards or avoid punishment. The level of introjected regulation is a condition of  
117 individual psychological dynamics related to managing self-esteem. The level of identified  
118 regulation is a condition of individual psychological dynamics that lacks interest in acting, but

119 has an interest in obtaining or completing its activities properly and correctly, and regulates the  
120 direction of behavior after identifying itself with medium-term goals. The level of integrated  
121 regulation is a condition of individual psychological dynamics to obtain constructive action by  
122 integrating the values received by the individual into his self-concept in a harmonious and  
123 meaningful way. The level of intrinsic motivation is a condition of individual psychological  
124 dynamics that shows authenticity to find solutions constructively, enjoys obstacles, pressures  
125 and problems as a process of maturing ways of thinking and acting, being able to produce new  
126 things and positive experiences as if the individual is absorbed in his activities.

127 The scale used uses an ordinal scale with alternative choices adjusted to the scoring  
128 guidelines for each appropriate answer referring to the self-determination theory of Deci and  
129 Ryan using the form of a continuum response model with six levels as alternative answers with  
130 the order of levels of amotivation, external regulation, introjected regulation, identified  
131 regulation, integrated regulation and intrinsic motivation.

### 132 **Data Collection Procedure**

133 There are some steps taken to carry out this study. For the quantitative part, the researcher  
134 developed a research instrument to measure students' self-determination based on [21] theory  
135 which would be used in the pretest and post-test. The instrument was given to 406 students to  
136 analyze their self-determination level. Based on this result, two groups were formed consisting  
137 of 19 participants; each group is the experimental group and the control group, which would  
138 be given academic guidance using the tacit knowledge model. Groups are made based on the  
139 results of the self-determination level, where students who are in the category of identified  
140 regulation as the control group, and students who are at the level of external regulation and  
141 interjected regulation are in the experimental group.

142 The experimental group was given three phases of academic guidance using the tacit  
143 knowledge model, which are the screening and intake phase, treatment or intervention phase,  
144 and follow-up phase. In the first phase, students were given illustrations, stories, and case  
145 presentations related to the issue of the self-determination construct, and they needed to be able  
146 to collect information from different perspectives, paradigms, perspectives, and beliefs and  
147 apply it through concrete actions. The responses given by students are both written and oral;  
148 besides that, information on student behavior is seen from the learning interaction process,  
149 followed by identification and analysis. The analysis identified through context analysis, such  
150 as paper documents, assignments, or articles, as well as the learning process to obtain the actual  
151 reality, is carried out through in-depth interviews.

152 In the second phase, student knowledge is socially constructed through the media,  
153 institutions, and society (social situations), resulting in a knowing process that produces new  
154 objects of knowledge (knowledge). The focus of the intervention phase is to encourage  
155 individual ways of thinking to process and synthesize explicit knowledge as a foundation for  
156 thinking for the future and to prove thinking processes that can solve new knowledge, develop  
157 new ideas and produce products.

158 In the last phase, students need to internalize behavior and ways of thinking consistently.  
159 The focus of this phase is to determine whether the behavior of individuals who have increased  
160 self-determination can persist consistently or is temporary after the termination of the program,  
161 followed by self-determination measures again. Evaluation is carried out after each  
162 intervention which is then given input from experts for model development. If the changes are  
163 temporary, a revision will be made to the intervention design, but if the impact of the  
164 intervention tends to be permanent, the intervention target will be expanded to a university  
165 context. This experiment was conducted for three to four months and adapted to the  
166 implementation process both offline and online.

## 167 **Data Analysis Procedure**

168 The results of quantitative data to test the effectiveness of the pretest and post-test of tacit  
169 knowledge guidance to develop self-determination were carried out through the Mann-  
170 Whitney test technique. The significance of tacit knowledge on the development of self-  
171 determination using a non-parametric test. The primary consideration is that the data type is  
172 ordinal, and the variance is not homogeneous. With this type of data, significance testing  
173 cannot be done with parametric tests. Therefore, the significance test uses the Mann-Whitney  
174 and Wilcoxon tests.

175 The Mann-Whitney and Wilcoxon tests are non-parametric statistical tests used to  
176 compare two independent data samples. They both measure the difference between two sets of  
177 observations without making any assumptions about the underlying distributions of the data.  
178 The Mann-Whitney test is a rank-based test, where the ranks of the statements from one sample  
179 are compared to the observations from the other sample. Meanwhile, the Wilcoxon test is a  
180 signed-rank test where the differences between pairs of values from each sample are compared.  
181 The Mann-Whitney and Wilcoxon tests are helpful in cases where normality assumptions  
182 cannot be made or where the data is too small to allow for parametric tests. These tests are also  
183 helpful in comparing the medians of two samples since they are not affected by outliers.

184 This technique is used because the sample data is not normally distributed, the two  
185 sample groups are independent or not related and have no effect on each other, and the sample  
186 is an ordinal data scale. The dynamics of the factors that influence the development of self-  
187 determination were gathered through interviews, observations, and worksheets on the tacit  
188 knowledge guidance process.

189 Qualitative data analysis techniques were used to analyze the data obtained from the  
190 results of the pretest questionnaire, interviews, and observations. Data were analyzed from text  
191 segments and determined the meaning of each level of self-determination. Data analysis  
192 through qualitative methods can describe the inhibiting factors for the development of self-  
193 determination.

194 The qualitative data analysis technique used the NVivo application. In Nvivo, the data is  
195 divided into two folders, namely the interview recording folder and the interview recording  
196 transcript folder. After the data is uploaded, the researcher creates a code or theme consisting  
197 of six levels of self-determination. Afterward, words or sentences representing the six levels of  
198 self-determination are highlighted and become data codes or coding.

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## 200 **Results**

### 201 **Empirical Test of the Effectiveness of Tacit Knowledge Guidance for Students' Self-** 202 **Determination Development**

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204 Testing the effectiveness of tacit knowledge guidance for developing student self-  
 205 determination using the U-mann withney technique. The U-mann Whitney technique is used  
 206 to determine the effectiveness of tacit knowledge guidance for the development of student self-  
 207 determination.

208 The use of the u-mann withney technique with the aim of making decisions in hypothesis  
 209 testing. The following describes table 2 which contains data regarding the empirical test of tacit  
 210 knowledge guidance in the experimental group and the control group.

211 **Table 2.** Empirical Test of the Effectiveness of Tacit Knowledge Guidance for Students' Self-Determination  
 212 Development

Test Statistics	Variable			
	Self Determination	Competence	Relatedness	Autonomy
Mann-Whitney U	37.000	68.500	48.000	85.000
Wilcoxon W	227.000	258.500	238.000	275.000
Z	-4.193	-3.287	-3.876	-2.796
Asymp. Sig. (2- tailed)	.000	.001	.000	.005
Exact Sig. [2*(1- tailed Sig.)]	.000 <sup>b</sup>	.001 <sup>b</sup>	.000 <sup>b</sup>	.005 <sup>b</sup>
Note	Significant	Significant	Significant	Significant

213 Based on the U-Mann Whitney test results, the calculation results of the value of  $m_2 =$   
 214 0.001 because the value of  $m_2 < 0.05$  then  $H_0$  is rejected; thus, Tacit Knowledge guidance was  
 215 practical for student self-determination. The conclusion that can be drawn from this  
 216 effectiveness test is that tacit knowledge guidance is able to develop student self-determination.

217 Hypothesis testing was also carried out on each aspect of student self-determination. In  
 218 the aspect of competence, the results of the U-Mann Whitney test obtained the calculation  
 219 results of the value of  $m_2 = 0.001$  and  $m_2$  value  $< 0.05$ . In the aspect of relatedness, the value  
 220 of  $m_2 = 0.000$  and the value of  $m_2 < 0.05$ . Meanwhile, in the aspect of autonomy, the value of  
 221  $m_2 = 0.005$  and the value of  $m_2 < 0.05$ . It appears that the value of each aspect of  $m_2 < 0.05$ .  
 222 Referring to the hypothesis testing criteria, then,  $H_0$ 's decision is rejected. The conclusion that  
 223 can be drawn from this effectiveness test is that tacit knowledge guidance is able to develop  
 224 self-determination in aspects of competence, relatedness, and autonomy. Specifically, the  
 225 comparison of the self-determination ranking average test is presented below.  
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**Table 3.** The Self-Determination Ranking Average Test

	Group	N	Mean Rank	Sum of Ranks
Self Determination	Control	19	11.95	227.00
	Experiment	19	27.05	514.00
	Gain		15.01	
	Total	38		
Competence	Control	19	13.61	258.50
	Experiment	19	25.39	482.50
	Gain		11.78	
	Total	38		
Relatedness	Control	19	12.53	238.00
	Experiment	19	26.47	503.00

	Gain Total	38	13.94	
autonomy	Control	19	14.47	275.00
	Experiment	19	24.53	466.00
	Gain		10.06	
	Total	38		

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Table 3 shows that the tacit knowledge guidance for <sup>1</sup>the development of self-determination of students who were tested in the study had a reasonably good influence which was able to produce a significant increase with an average ranking increase of 15.01. The <sup>1</sup>showed that the guidance of Tactit Knowledge had a significant effect on the development of self-determination.

The results of qualitative data analysis showed that three factors hindered students from developing self-determination. The influencing factors were academic ability, sense of identity, and culture, which are described in detail as follows:

#### Academic Ability

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The development of self-determination could be part of a student development program that the institution regularly carries out through lectures in all subjects. Students' academic ability was still focused on the level of interjected regulation. This is revealed in the following interview: "If I cannot complete an assignment, well, I look for material in the library or look for books or journals on certain websites, I (usually) finish the tasks I am interested in first..." (translated) The assignments that must be completed were found to be the reason that made some students take action to attend lectures optimally and to prepare various materials before lectures. Even though some students had no interest in certain subjects, students still showed constructive actions.

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On the one hand, the rules for the professionalism of educators to improve the quality of the learning process in higher education have not been fully implemented. On the other hand, educators are "trapped" in the condition between delivering material and finishing administrative tasks, thus forgetting the feedback process for student assignments. This was found in one of the following interviews with students: "Actually, sometimes I feel disappointed. The assignments that I take seriously with all my heart are sometimes never given any feedback. There are even difficult subjects that give no appreciation to me... It is just... I feel tired, sir." (translated)

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Culture Education and learning should not only be limited to the pedagogical aspect but also be focused on how students can make changes in society. The perspectives of students who are influenced by the culture in this social system are seen in one of the following interview results: "... during the offline or online lectures, sometimes I feel the willingness to ask questions and discuss with friends or lecturers. Even if my friends do that kind of thing, I sometimes am motivated and think that I have to be like them or even more than them..." (translated)



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266 The research findings showed that the students' ability to produce knowledge was based on  
 267 the results of asking educators who already had extensive experience. This can be used to  
 268 transform ways of thinking to be internalized in daily actions. Nevertheless, the efforts made  
 269 by students were not optimal. At the level of self-determination, the students were still in the  
 270 introjected regulation category.

271 The statement in the previous sub is reinforced by the statement of one of the students. In  
 272 the interview, the student revealed that if other students were active in their class, they were  
 273 seen as competitors, which triggered him to do better. The following is the expression by the  
 274 student.

275

276 "In fact, personally, when I look at those who are active in class, I see them as my rivals. They  
 277 are my competitors to see who is the best in class." (translated)

278

279 This view of cultural imperialism is seen in one of the following interview results:

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281 "Most of the time, the task given must have international references as its source... it is quite  
 282 difficult to find the source from overseas. In the end, I leave the task for the last and do the  
 283 easy stuff first." (translated)

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285 The research findings show how students are "trapped" in the policy of the learning process,  
 286 which is "colored" by the values of cultural imperialism, which requires that students'  
 287 assignments must have international sources. However, they tend to be less concerned in terms  
 288 of local references.

### 289 **Sense of Identity**

290 The factor that influenced the development of self-determination was the ability to control.  
 291 Students seem to have still confused about what to do in doing the assignments and leading  
 292 group discussions. This was found from the results of the interviews as follows:

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294 "I used to be a group leader, but what I felt was a disappointment because not all group  
 295 members worked...it would be better if I did not become a group leader at all" (translated)

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297 "I only join an organization on campus, and it is only our department's students' association.  
 298 I do not want to be the head of any division... let alone become the chair of the students'  
 299 association" (translated)

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300 The research findings show that there is nothing wrong with what students do, but there  
 301 were indications of weak control to form a professional identity.

### 302 **Discussions**

303 The effectiveness of tacit knowledge guidance for the development of student self-  
 304 determination tested in research has a fairly good influence, namely being able to produce  
 305 significant increases with an average increase ranking of 15.1. This shows that Tacit  
 306 Knowledge guidance has a significant effect on the development of self-determination.

307 The significant development of student self-determination is caused by the fulfillment of  
 308 aspects of competence, connectedness and independence, so that it has an impact on the level  
 309 of regulation that each student has. The results of the research are in accordance with the results  
 310 of previous research conducted [26], [27] revealed that the more self-determination aspects are  
 311 fulfilled the more it shows the process of internalizing individuals to a higher level (intrinsic  
 312 motivation).

313 The research findings are relevant to the assumption that tacit knowledge guidance plays  
 314 a role as a key to intelligent behavior in a practical setting that applies skills to overcome  
 315 various life problems it faces, has an impact on individuals having clear and directed goals,  
 316 produces ways of thinking and acting, determined motivational patterns, has intentions and  
 317 persistence [28].

318 The significant influence of Tacit Knowledge guidance for the development of self-  
 319 determination and an increase in the average self-determination, allegedly related to a  
 320 systematic formulation model, creates a situation that is able to facilitate the process of  
 321 generating knowledge and students are given the opportunity to learn to be more resilient to  
 322 face various challenges and pressures as well as students able to work in their field.

323 The application of Tacit Knowledge's guidance for the development of self-  
 324 determination, furthermore the findings of this study are related to understanding, explanation  
 325 and interpretation. Research findings in order to be easy to understand are associated with [29],  
 326 [30] states that to obtain a complete three-term circulation, three stages are needed including,  
 327 namely the semantic stage for the development of self-determination which takes place from  
 328 appreciation to thinking ideas, sources of information obtained from intuition, experience life  
 329 and the sequence of activities to be carried out.

### 330 Advice on Equations

331 The development of self-determination in the aspect of competence is in the category of  
 332 integrated regulation, seen in the proportion of 37.19%. The research findings are related to the  
 333 study results based on the Causality Orientations Theory in self-determination. Students who  
 334 are conditioned systematically, logically, and creatively innovatively will tend to behave  
 335 appropriately in the environment. Individuals with an autonomous orientation are more  
 336 interested in and appreciate activities [27, 28].

337 The study results in [29, 22] stated that when students believe that they are in control of  
 338 their environment's demands, they can act more effectively and develop self-determination  
 339 with their own approval. The actions taken with self-reflection become exciting and beneficial  
 340 for themselves and direct their happy, voluntary, committed, and active behavior [30, 31].

341 The findings are supported by previous studies [11, 32] that the competencies performed  
 342 by students range from determined to controlled (driven by interpersonal or intrapsychic  
 343 demands). The range was distinguished using the concept of a causal locus [38]–[40].

344 The behavior accompanied self-determination tends to be more attached to the  
 345 individual, making the individual more motivated and having an internal locus of control. If  
 346 the individual has self-determination, he will be more consistent in his actions, be socially  
 347 responsible, show perseverance and persistence in achieving goals, and have higher self-  
 348 awareness and adaptability [41].

349 The level of self-determination in the relatedness aspect was mainly at the level of  
 350 identified regulation, and a small portion was at the level of external regulation and introjected  
 351 regulation. This study was based on relatedness motivation theory which represented the  
 352 importance of developing and maintaining personal, friends, family, and community  
 353 relationships and the fulfillment of self-determination aspects, one of which is relatedness.

354 A study from Loman et. al [42] explained that the socio-ecological approach views self-  
 355 determination as a psychological construct that refers to actions caused by oneself so that it  
 356 allows a person to act volitionally based on his own desires.

357 Volitional, in this case, refers to the capability of consciously generating choices,  
 358 decisions, and intentions. In the socio-ecological approach, there are several activities to  
 359 develop self-determination, which are usually in the form of interventions that focus on: (1)  
 360 efforts to build individual capacity to take action that leads to a higher level of self-  
 361 determination, a more autonomous regulatory style (e.g., problem-solving, decision making,  
 362 goal setting, and self-advocacy); (2) efforts to modify the context or environment in such a way  
 363 as to encourage a person to do certain things in his life; and (3) efforts to provide the support  
 364 that can develop self-determination such as technology and accommodation [38, 39].

365 The level of self-determination in the autonomy aspect is mainly at the level of identified  
 366 regulation, and a small portion is at the level of external regulation and intrinsic regulation.

367 Based on the study of the organismic integration theory of self-determination, individuals  
 368 to achieve intrinsic motivation/build self-determination require a regulatory style arranged on  
 369 the internalization continuum line. Individuals are able to internalize intrinsic motivation and  
 370 have an optimal self-determination aspect (competence and relatedness).

371 The previous studies [40, 41] outlined that individuals who have optimal self-  
 372 determination usually because they perceive change based on a will that leads them to feel that  
 373 they are able to make positive changes with their abilities. They also tend to be ready and give  
 374 high priority to making changes compared to other priorities.

375 Another study [27] stated that to determine individual behavior in developing relatedness  
 376 aspects, and several things should be considered. First, each individual seeks his own unique  
 377 potential to become capable and autonomous individuals in showing their functioning, which  
 378 emphasizes the importance of choices and other constructs related to the self.

379 The development of self-determination in the relatedness aspect is owned by individuals  
 380 who have choices, not those who do something under pressure. When individuals exercise  
 381 control over something and are free to determine what results they want from an action, or  
 382 when the person chooses to let go of that control, then that is where self-determination appears  
 383 [8, 43]. Furthermore, individuals who feel controlled or forced to achieve specific results from  
 384 an action show the same negative impact as those who have no control. Along with these  
 385 previous studies [13, 44], individuals think carefully about their decisions, dare to take the risk  
 386 with the decisions made, and do something for the pleasure and satisfaction of getting things  
 387 done.

388 The significant development of students' self-determination was caused by the fulfillment  
 389 of aspects of competence, relatedness, and autonomy. Therefore, it impacted the level of  
 390 regulation owned by each student. The study results followed the results of previous research  
 391 conducted by [21, 45] which revealed that the more fulfilled the self-determination aspect, the  
 392 more it shows the process of internalizing the individual to a higher level (intrinsic motivation).

393 The research findings were relevant to the assumption that tacit knowledge guidance plays  
 394 a role as a key to intelligent behavior in practical settings that applies its skills to overcome  
 395 various life problems it faces. It impacted individuals having clear and directed goals,  
 396 producing determined ways of thinking and acting in motivational patterns, having intentions,  
 397 and perseverance [28].

398 The significant influence of Tacit Knowledge's guidance on the development of self-  
 399 determination and an increase in the average of self-determination were thought to be related  
 400 to a systematic formulation model, creating a situation that was able to facilitate the process of  
 401 generating knowledge. This also allowed the students to get the opportunity to learn to be  
 402 tougher to face various challenges and pressures, as well as to work in their field of interest.

403 Furthermore, the application of Tacit Knowledge's guidance for the development of self-  
 404 determination in this study was related to understanding, explanation, and interpretation. The  
 405 research findings were linked to the framework of the previous research [47, 48] in order to  
 406 make it easy to understand. The previous research said that to obtain a complete circularity of  
 407 the three terms, three stages were needed, including the semantic stage for the development of  
 408 self-determination, which takes place from appreciation to thinking ideas, sources of  
 409 information obtained from intuition, life experience, and the sequence of activities to be carried  
 410 out.

411  
 412

### 413 **Academic Ability**

414 At first glance, nothing was wrong with the statement of academic ability. However, as  
 415 stated by [21, 49, 50], the control process carried out by students requires support from  
 416 educators to provide awareness of values and regulations and things that are paper-based that  
 417 can be measured.

418 This is in line with [52], which explained that positive feedback or praise could support  
 419 and improve aspects of the recipient's competence. Giving feedback makes the recipient feel  
 420 evaluated or controlled. However, if the feedback is made too prominent, the student's self-  
 421 determination development will not increase, and in some cases, the level will decrease.

422 The research results on academic factors supported by the leadership of educators in  
 423 managing interpersonal relationships and guiding students will be positively correlated with  
 424 increasing changes in the dynamics of the development of self-determination towards  
 425 identified regulation to intrinsic motivation [53].

426  
 427

### 427 **Culture**

428 The results of the statement, at first glance, look positive. However, the thinking and acting  
 429 skills of students tend to stagnate. There was a compulsion that must be resolved and even the  
 430 loss of the assumption of developing self-determination. This was considered to be a person's  
 431 ability to have actions to change cognition and behavior constantly to bring up pleasant  
 432 decision choices, bringing benefits for themselves, and gain flexible accommodation from the  
 433 social environment and are influenced by one's sense of 'self' (meaning, confidence, joy,  
 434 optimism, determination, and enthusiasm) [22, 36, 53].

435 This is supported by several researches [37, 54], that viewed **Self-determination in the**  
 436 **cultural context as a psychological construct that refers to self-caused actions that allow a**  
 437 **person to act volitionally based on his own desires.**

438  
 439

### 439 **Sense of Identity**

440 The research findings showed that the vigorous process of internalizing societal norms  
 441 without realizing them often makes students lose the opportunity to learn to be independent.  
 442 Although it looks positive from the statement results, this is contradictory because students  
 443 tended not to be unable to make choices. They did not have the courage or lack of confidence  
 444 to make or making choices. This is in line with the studies of [56], [57] that explained autonomy  
 445 (stand-alone behavior) is related to the existence of students who can be trusted to be able to  
 446 make their own choices.

447 In addition, self-determination behavior refers to the identification of essential  
 448 characteristics, such as a) individual autonomous behavior, b) self-regulation, c) individual  
 449 initiative and response to an event in a psychological context, and d) actions that a person takes  
 450 consciously [58].

## 451 **Conclusions**

452 The use of tacit knowledge guidance begins with research findings from 2000 to 2021 from  
453 reputable journals totaling 720 journals, directs vacancies and needs to be followed up for the  
454 development of self-determination through a learning model that views tacit knowledge as an  
455 integral part that can describe the learning process in higher education in terms of forms of  
456 learning, task assessment, and feedback processes. In higher education itself, the level of  
457 student self-determination increased from previously in the category of ammotivation and  
458 external regulation to identified regulation. This increase is based on the provision of academic  
459 guidance, which has an impact on students being able to focus on learning that is quite  
460 successful in developing cognitive, affective, and psychomotor aspects.

461 This research has implication for developing self-determination. Students must develop  
462 self-determination to succeed in their academic and professional careers. Tacit knowledge can  
463 be an effective tool to help students in this regard. Tacit knowledge is acquired through life  
464 experiences, such as observations, behavior, and values. It is critical for students to understand  
465 and appreciate the value of tacit knowledge to develop self-determination. For instance, when  
466 students observe how their peers or mentors approach specific tasks, they can gain valuable  
467 insights into how to apply their knowledge and skills productively. Based on this research,  
468 students can learn how to take ownership of their learning and develop self-determination.  
469 Additionally, students can also benefit from understanding the values of their peers and  
470 mentors, as it can provide them with a better understanding of the importance of developing  
471 self-determination. Finally, tacit knowledge can also help students identify the goals and values  
472 that are important to them. By reflecting on such matters and goals, students can better  
473 understand the direction they need to take to achieve success. In summary, tacit knowledge can  
474 be a powerful tool for students to develop self-determination, as it allows them to understand  
475 the importance of taking ownership of their learning and setting their own goals.

476 The limitation of this research is that the provision of academic guidance by researchers  
477 does not touch on the development of student self-determination dimensions. In addition, the  
478 slight influence of self-determination on aspects of independence compared to aspects of  
479 competence and connectedness is related to the subject's social desirability in responding to  
480 instrument statements, the sensitivity of research design, and data analysis strategies. If the  
481 research design and data analysis techniques are considered to contaminate the research  
482 findings, further, and sharp studies are needed with research using a longitudinal design.

## 483 **Data Availability**

484 The quantitative data and qualitative data used to support the findings of this study are included  
485 within the article.

## 486 **Conflicts of Interest**

487 The authors declares that there is no conflict of interest regarding the publication of this  
488 paper.

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495 **References**

496 [1]

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# Knowledge

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