# Determinants of Learning Amongst 21st Century ESL Learners

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**Abstract**

This study focuses on determinants of learning amongst 21st century English as a second language (ESL) learners at Wenzhou-Kean University. Although it is an undoubted fact that the persistent change in learning experiences has contributed to the changing of learning determinants of 21st century ESL learners, the actual determinants have not been explored and defined. The study is a cross-sectional study that uses both descriptive and inferential statistics. 174 WKU students participated in this study by completing online questionnaires, while another ten students participated through unstructured interviews. The data collected in the questionnaire and the answers acquired from the interviewees were described and analyzed in depth. This study described the personal attributes, preferences, and recourses of 21st century ESL learners. According to the study results, WKU students consider motivation, self-discipline, and study environment as the three main determinants of learning. In addition, the findings revealed that most WKU students believe that the learning resources, study mode, and teaching method have a great impact on their studies. Meanwhile, their pre-university learning experiences have an impact on their studies in university, which is reflected in their better adaptation to paperless study at university. The unstructured interview also found that ESL students' learning pressure are well managed. However, most ESL students need help adapting to the new learning environment and need to make better use of the resources that can support their learning, such as ELC. This paper also identifies suggestions that ESL college students agree with by considering the three main determinants discovered in the questionnaire, such as motivation, self-discipline and study environment, which can help them perform better in their studies.


Keywords: ESL, Learning Determinants, Motivation

**Introduction**

**Background of the Research**

It is an established fact that with the rapid development of technology, society, and the advance of globalization, learning has a persistent change caused by experience. 21$^{st}$ students should develop different skills from those developed by their predecessors. Students in the 21st century must acquire the requisite abilities. A changed social life, a different economic world, and a more demanding and skill-oriented workplace are all things that 21$^{st}$ century schools should help students prepare for (Saleh, 2019). Therefore, determinants of learning amongst 21st century students deserve attention.

There are many external factors that can be determinants of learning, including study environment, instructors, technology, practice opportunities, educational resources, and family background. Some studies have found that ESL college students have great changes in the determinants of learning. However, these studies are only based on the data collected from ESL college students from Malaysia, ignoring the ESL students in China (Tharumaraj et al., 2018). Therefore, this study aims to investigate the determinants of learning amongst 21st century ESL college students in China, focusing on students at Wenzhou-Kean University and providing some suggestions on how to make full use of the study resources.

**Research Questions**

1. What is the most significant personal attribute for ESL learners in the 21st century?
2. What are the factors related to successful learning for ESL learners in the 21st century?
3. Which of these factors provide the most significant impact to successful learning among 21st century ESL learners?

**Literature Review**

The following literature review contains different relevant studies on the determinants of learning amongst 21st century ESL learners.

**Internal Factors**

Motivation to learn a second language has been emphasized by scholars and language teachers. According to Gardner and Lambert (1959), motivation is essential for success in second language learning. He mentioned that individuals can be motivated to learn a second language by integrative motivation as interest in the language culture and instrumental motivation driven by utilitarianism (1985). The study conducted by Ali and Ahmed (2019) shows that instrumental motivation has the most significant role in learning English, as the students' main reasons for learning English are a tool for communication, the necessity for employment and the need for passing exams. Likewise, Torres and Alieto's study (2019) also demonstrates that Filipino ESL learners are more instrumentally motivated to learn English. Apart from Gardner's classification of motivation into instrumental and integrative, some scholars classify it into intrinsic and extrinsic. According to Ryan and Deci (1985), intrinsic motivation refers to doing something driven by inherent interest and pleasure while extrinsic motivation refers to doing something to get the outcome. The results of Hussain, Salam and Farid's study (2020) show that most Pakistani adult learners' motivation for learning English is completely based on pursuing lifelong achievements, categorized as intrinsic motivation. Moreover, the study

focused on Vietnamese ESL students shows that the students can be motivated by both intrinsic and extrinsic factors such as communicative purposes, personal interests and pleasure, academic and career path, and other people such as friends, family and teachers (Nguyen, 2022). However, it reveals that intrinsic motivation is the dominant one for ESL students to learn English (Nguyen & Habók, 2022).

Self-discipline, which is related to the word procrastination, is a significant internal factor. Procrastination, which means the tendency to delay a task, has become a major barrier for students to perform in their thesis process and academic studies. Therefore, the study shows the importance of self-regulated learning, particularly regular study according to the course schedule, the time to complete assigned tasks, frequent access to course materials, and the reading of relevant course information, and fighting procrastination with self-discipline (Almalki et al., 2020). To help students form good habits to better manage their time, a tool called the Pomodoro technique has been developed. This kind of 25-minute studying followed by five 5-minute break has formed an effective mechanism through the exact calculation of the required time of completing a subject or the due time of a task, which can help maximize the utilization of time. Furthermore, if procrastination happens, the Pomodoro technique can sense the possible delay through relevant measures to warn the users to take some actions to quickly make up (Almalki et al., 2020). Therefore, the Pomodoro technique, as a representative of self-disciplined tech helpers informs users of the importance of the consciousness of time management and efficiency in the learning process. In fact, studies have also shown that long working hours lead to insufficient dopamine release, which reduces motivation and productivity, while other external factors, like the unknown fear of the complex task, and the perfectionism of work, can all cause procrastination (Browne et al., 2018). Learning requires timely positive feedback, and learning tasks that do not provide students with dopamine are more likely to lead to procrastination, resulting in a loss of self-discipline and reduced learning efficiency. Based on this similar train of thought, furthermore exploring the relationship between self-discipline and relevant software, researchers focus on the specific setup of the software, by combining gamification and education, blending the visual reward mechanism of the game with the otherwise boring learning task, to improve productivity and motivation. The findings represent that compared with a simplified time-management version of the software, participants from the gamified version show better grade performance and more interactive involvement with the software, and are more easily form self-discipline to take control of their time and study rhythm (Browne et al., 2018).

The pre-university learning experience of ESL students also has a long-lasting impact on their university study when considering the aspects of second language exposure and digital skills level. The research results show a positive correlation between years of pre-university second language study and student's proficiency in the university study, which points to the importance of pre-university encounters with the second language and its culture (Strawbridge et al., 2019). It can thus be concluded that pre-university exposure to the second language makes a great contribution to the students' language proficiency at the university level (Strawbridge et al., 2019). The research statistics also show that when pre-university students receive greater training in knowledge and general use of digital devices, the higher level they have in understanding the advantages and benefits to their academic achievement (García, 2020). Therefore, it reveals that students need to train their digital skills before entering university, which can equip them with adequate knowledge of making good use of digital devices in their learning process at university.

**External Factors**

Learning environment and resources can greatly impact college students' learning. A typical example is ELC (The English Language Center). ELC is a professional unit that offers 21st century students a variety of English learning opportunities and tailored services to help college students improve their English skills. Most students get language confidence under the guidance of ELC. The learning environment and learning resources indeed change student's attitudes towards study. According to Murphy, Eduljee and Croteau (2021), students' preferences included a mix of teacher-centered and student-centered approaches, some of which include lectures with student interaction, demonstrations and practice, lectures with the use of PowerPoint, free-flowing classroom discussion, guest speakers, and games in the classroom. Besides, Bara and Xhomara (2020), also said there is a medium positive correlation between problem-based learning and academic achievement. A good environment makes students more positive to attend class. While effective resources are good for them to absorb different knowledge.

In addition, technology and software development also make education more effective. According to Xu and Tsai (2021), the teaching method of English has increased its diversity by engaging with the network as a new platform to exchange information, which makes it possible for students to cross both temporal and spatial boundaries. The emergence of interactive applications such as Kahoot! has also aroused students' interest in learning. Lin, Ganapathy, and Kaur's research (2018) revealed that the engagement and fun factors of game-based learning have been found to boost learner motivation and sustain retention. The emergence of these softwares makes communication between professors and students more convenient, and the student can also understand teachers' content more intuitively. At the same time, it is efficient for college students to deepen their impression through the interactive function of the software and strengthen their practice of the learning content.

Family background is also a large determinant of learning. The educational success of children, which contains the formation of knowledge, abilities, and values, is significantly impacted by their parents' education level. In most cases, educated parents are more likely to provide helpful guidance and educational choices for themselves. They have already gone through the educational process and are aware of the learning process as well as the highs and lows of academic decisions. Therefore, compared to those with less education, parents with higher educational levels are more easily to share educational life experiences that are effective and convincing in inspiring their kids to better study, which proved to have a significantly positive relationship with academic achievement (Idris et al., 2020). Furthermore, relevant research also found that parents with better socioeconomic status are more likely to invest in educational expectations in their children, therefore fostering an achievement-supportive environment and helping them succeed in school (Pinquart & Ebeling, 2020). In the meanwhile, a learning-friendly home environment is essential for student's development, the fact is that parents with greater educational achievement are more conscientious and careful about their children's education, and in most cases, they could easily provide help and motivation for, those interactions of parents constitute positive psychological effects on children, decrease kids' hesitancy, and further boost kids' self-assurance and faith in their parents. However, due to the lack of a psychological aspect, illiterate parents are unable to help their children, and as parents, their impact is less powerful than that of educated parents (Idris et al., 2020). Idris (2020) also revealed that the relationship between parental education and the current grooming of children exists and is necessary. Furthermore, Pinquart and Ebeling (2021) also indicated the bi-directional relationship between parental expectations and children's accomplishments. The

expectations of parents are typically higher than those of their children. Part of the influence of parental expectations on child achievement was mediated by children's educational expectations, academic engagement, and academic self-concept, as well as parental achievement-supportive behaviors, and the mediating effect of children's expectations was stronger in older children. Despite whether there is a genetic link between children or merely the parents who raised them, family background still has a major role in how much wealth children accumulate and how they have as investors as adults (Fagereng et al., 2021).

**Methods**

This study adopts exploratory method,with the understanding of the research problem, this study aimed to explore which learning determinant will affect 21st century students most.There were 180 participants of the study from Wenzhou- Kean University. The researchers used simple but clear random sampling with the method of a random online self-made questionnaire and few groups were selected for detailed interviews. The following are the criteria for this research. First, participants in this questionnaire should be college students batch 2021-2022, second, participants should be ESL learners.

This research utilized self-made questionnaires and supplemented with unstructured interviews. The online questionnaire included a series of relevant questions, which were divided into two types: single-choice and multiple-choice. There were three parts of the online questionnaire: Part I – general information of the respondents, including year level, gender and GPA; Part II – participants' personal attributes of learning; Part III – preferences and resources of the participants. Apart from the questionnaire, the study also adopted the unstructured interview to further explore the learning difficulties of 21st century ESL learners and thus provide reliable suggestions.

Descriptive data were used to conduct a clear and in-depth data analysis. Data processing used Microsoft Excel to form corresponding charts and graphs, and Microsoft Word was used to do systematic data analysis. Meanwhile, the standard ranking was used to calculate students' responses to the scaled questionnaire.

Through frequency counting, this study determines the basic information of the interviewees, identifies the inspiration of the pre-university education for their future study (objective 1), judges the help for them focusing on the shift of the learning center in education (objective 2), and records their preference for learning resources (objective 3). Finally, according to these data, we figure out the factors that affect the interviewees' academic performance (objective 4).

**Limitation of the Study**

Although the process of this research is well-designed, there still exist several limitations. This study merely focuses on ESL Learners from Wenzhou-Kean University, lacking useful data and valid interviews from other universities in China, which will cause an effect on data integrity and representation. Besides, compared with the total number of Wenzhou-Kean University students, the number of respondents is quite limited, a wider sample comparison is still required for a more rounded analysis. Moreover, this study has selected limited aspects of learning determinants, and there needs to be more investigation of other factors. Therefore, to some extent, it is hard to draw accurate and comprehensive conclusions on the determinants of 21st century ESL learners.

**Results and Discussion**

**Respondents' Gender and Year Level**

| Categorical Variables | | Frequency Counts | Percentage |
|---|---|---|---|
| Gender | Male | 52 | 29.89% |
| | Female | 122 | 70.11% |
| Year Level | Freshmen | 18 | 10.34% |
| | Sophomores | 118 | 67.82% |
| | Juniors | 32 | 18.39% |
| | Seniors | 6 | 3.45% |

Table 1: Basic Information of Respondents

The distribution of participants is presented in Table 1. In total, there are 176 students who participated in this questionnaire survey, which is approximately 5% of the total population in Wenzhou-Kean University. There were 70.11% females of our total 176 respondents, and 29.89% male participants in our questionnaire survey. The total number of female participants is 122, while the total number of males is 52. It obviously shows that the female students take the dominant proportion here. Of the total 176 participants, 18 or 10.34% of them are freshmen, 118 or 67.82% of them are sophomores, 32 or 18.39% of them are juniors and 6 or 3.45% of them are seniors. Therefore, we can conclude that sophomores are the main participants of the study.

**Motivation for Studying English**

| Item | Frequency Counts | Percentage | Rank |
|---|---|---|---|
| Self-improvement | 125 | 71.84% | 1 |
| Expectation of parents | 14 | 8.05% | 3 |
| Peer pressure | 23 | 13.22% | 2 |
| Others | 12 | 6.9% | 4 |

Table 2: Responders' Motivations for Studying English

Table 2 presents students' responses to their motivation for studying English. 71.84% of the students regard their motivation for learning English as to improve themselves. It should be noticed that over half of the students are determined to learn English for self-improvement, which is driven by utilitarianism. Therefore, according to Gardner's classification of motivation, the motivation of WKU ESL learners is mainly instrumental motivation (1985). And respondents' choice of expectation of parents and peer pressure only adds up to 21.27% of the percentage, which shows that college students in the 21st century are self-motivated, rather

than being pressured by their parents and peers. Therefore, it indicates that the students of WKU ESL learners are more intrinsically motivated rather than extrinsically motivated. It can thus be concluded that instrumental and intrinsic motivations are the dominant motivations for WKU students to learn English as their second language. This result is similar to Lu and Berg's (2008) study which showed that instrumental motivations.

## Student-Centered Teaching and Learning Mode

| Student's preferred form of instruction | Mean $\overline{X}$ | SD | Scaled Responses | Descriptive Interpretation |
|---|---|---|---|---|
| Student prefer a seminar-style teaching to a lecture-based teaching | 3.3 | 1.12 | Agree | Above Average |
| Compared with professors teaching according to established content, students prefer professors to flexibly adjust teaching content according to students' classroom feedback | 3.9 | 0.97 | Agree | Above Average |
| Teachers use interactive software to promote student learning | 3.7 | 0.74 | Agree | Above Average |
| Compared with paper books and documents in the library, students prefer to search for electronic books and documents on the Internet | 3.7 | 0.82 | Agree | Above Average |

Table 3: Responders' Views on Student-centered Teaching and Learning Mode

The study investigates the four directions of teaching form, and averaged 174 interviewees' preferences for teaching style, flexibility of teaching content, use of interactive software and search for information. The results show that the students prefer seminar-style teaching and hope the professor can adjust the teaching content according to the classroom feedback. They are willing to use interactive software for classroom learning and prefer electronic products to access learning materials. Meanwhile, they believe that using interactive software and electronic devices can promote their learning efficiency. The mean value of the four directions is greater than 3, and the standard deviation is 0.91. The grand mean of 3.65 and the small variance reveals that students' preference for the student-centered teaching and learning mode is above average. Students are interested in new teaching methods and diverse teaching resources, while traditional teaching methods, such as paper teaching, are no longer the first choice for college students in the 21st century. This result is consistent with Osman, Jumaludin and Iranmansh's study (2015), which showed that students highly agree with student-centered teaching and learning mode.

**GPA and the frequency of Using Self-Regulatory Software**

|  | *Frequency* | *GPA* |
|---|---|---|
| Frequency | 1 |  |
| GPA | -0.144064218 | 1 |

|  | *Standard Error* | *t Stat* | *P-value* |
|---|---|---|---|
| Intercept | 0.158236796 | 24.38025948 | 1.07258E-57 |
| Frequency | 0.082896744 | -1.909301697 | 0.057887905 |

Table 4: Responder's GPA and the Frequency of Using Self-regulatory Software

To determine whether the frequency of using self-regulatory software has a relationship with the average GPA, a correlation using Pearson r is calculated. Results show that the frequency of self-regulatory software does not have a significant relationship with the GPA ($r = -.144$, $p > 0.05$).

In contrast to the results of the previous studies showing that the use of self-regulatory software can help students better manage their time and increase their productivity, which can help to improve students' grades, our study results show that the use of these software has no significant contribution to students' learning outcomes (Browne et al., 2018).

**The Influence of Pre-university Education on University Studies**

| Item. No | The influence of pre-university education on university studies | Mean x̄ | SD | Scaled Responses | Descriptive Interpretation |
|---|---|---|---|---|---|
| 1. | Using paperless learning before university make you better adapted to paperless study at university | 3.64 | 1.33 | Agree | Above Average |
| 2. | Your parents' education level will affect your learning | 3.63 | 1.25 | Agree | Above Average |
| The influence of pre-university education on university studies | | **3.635** | **1.29** | **Agree** | **Above Average** |

Legend: Strongly Disagree (0.1-1.0); Disagree (1.1-2.0); Neutral (2.1-3.0); Agree (3.1-4.0); Strongly agree (4.1-5.0)

Table 5: Responders' Views on the Influence of Pre-university Education on University Studies

To explore whether pre-university education will affect university studies, a few questions were asked. Results show that there does exist a relationship, while more than half of respondents agree that using paperless learning before entering university helps them better adapt to paperless study at university. Furthermore, parents' education level also has an influence on learning, which reflects that pre-university effort not only can help students better transform to university studies but is also a predictor of later academic success (Van et al., 2017). Educated parents are more likely to provide a good home learning atmosphere. Based

on their own educational experiences, helping their children take fewer detours, and providing more professional guidance and suggestions.

**Personal Attributes for ESL Learners in the 21st Century**

| Personal Attributes | Frequency | Rank |
|---|---|---|
| Motivation | 110 | 1 |
| Psychological well-being | 41 | 3 |
| Self-discipline | 100 | 2 |
| Personality | 32 | 4 |
| Previous education experience | 19 | 6 |
| Interpersonal relationship | 15 | 7 |
| Learning method | 22 | 5 |
| Other | 2 | 8 |

Table 6: Personal Attributes For Learners In the 21st Century

Table 6 shows the frequency and rank of the personal attributes of 21st century ESL learners. Motivation ranks the highest among all the personal attributes of 21st century ELS learners. Self-discipline ranks second and psychological well-being ranks third. Therefore, motivation is the most significant personal attribute of ESL learners in the 21st century.

**Factors Related to Successful Learning for ESL Learners in the 21st Century**

| Personal Attributes | Frequency | Rank |
|---|---|---|
| Motivation | 110 | 1 |
| Psychological well-being | 41 | 5 |
| Self-discipline | 100 | 2 |
| Personality | 32 | 6 |
| Previous education experience | 19 | 9 |
| Study environment | 72 | 3 |
| Professors and partners | 48 | 4 |
| Technology | 7 | 13 |
| Practice opportunity | 14 | 11 |
| Interpersonal relationship | 15 | 10 |
| Education resources | 28 | 7 |
| Family background | 12 | 12 |
| Education method | 22 | 8 |
| Other | 2 | 14 |

Table 7.1: Factors Related to Successful Learning for ESL Learners in the 21st Century Based on the Survey
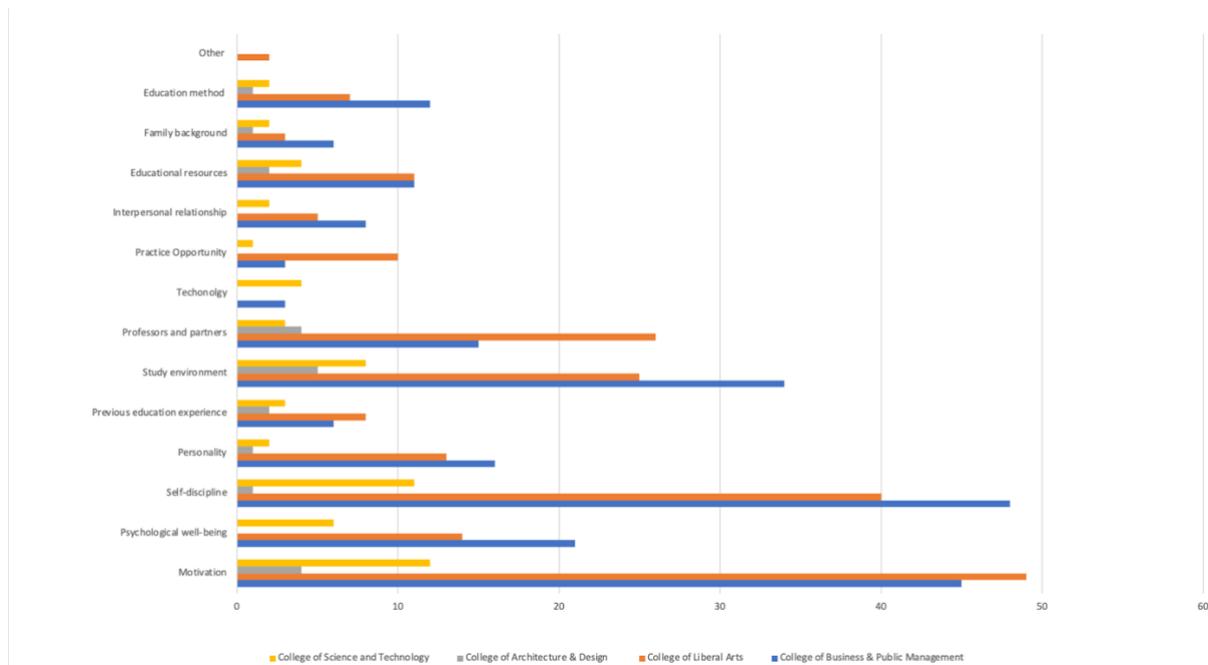
Figure 1: Differences in Learning Determinants amongst Students

Table 7.1 shows three of the learning determinants that have the greatest impact on students, which are motivation, self-discipline and study environment. Figure 1 further compares the three determinants that students from different colleges identified as having the greatest impact on their learning. The results show that for the majority of students from the College of Business and Public Management, self-discipline, motivation, and study environment are three of the greatest learning determinants. For the students from the College of Liberal Arts, motivation, self-discipline and Professors and partners are three of the greatest learning determinants. The students in the College of Architecture and Design believe that family background, motivation and professors and partners are three of the greatest learning determinants, while students in the College of Science and Technology regard their greatest learning determinants as motivation, self-discipline and study environment. It is worth noticing that students from the College of Business and Public Management and College of Science and Technology regard study environment as one of the three determinants in common. It can thus be surmised that the reason for this result is that students from these two colleges have to handle large amounts of data and code in their studies. Therefore, the study environment has a significant influence on their study. Moreover, the students from both the College of Liberal Arts and Architecture and Design view professors and partners as one of their common determinants, while students from the College of Business and Public Management and Science and Technology do not. It can be inferred that the reason for this result is that the assessments for students in the former two colleges are mainly essays and artworks marked by professors based on professors' subjectivity, while the assessments for students in the latter two colleges are mainly examinations with fixed answers. What is quite interesting is that part of the students in the College of Architecture and Design recognize family background as an important effect, but this factor isn't the first choice of students at other colleges. This is because students at this school are required to complete many hands-on projects, most of which require the purchase of expensive materials. A good family background can provide them with enough financial support.

**Unstructured Interview Analysis**

In order to further understand the 21st century learners' views on the factors that affect learning, we interviewed ten students from different grades offline, the results are presented below. In general, there were three from freshman, five from sophomore, and two from junior.

**Academic Pressure** - The results for the first interview question show that most interviewees believe their pressure comes from the pursuit of a higher GPA and the competition between peers. However, all of the interviewees developed their own ways of regulating their emotions and pressure. Study pressure can be regarded as one of the learning determinants for 21st century ESL learners as they are studying with a second language they are unfamiliar with. According to Hakim, Fajri and Faizah (2022), academic stress can help individuals maintain their interest in participating in their studies, which may also increase their enthusiasm or motivation. Therefore, the answers of the interviewees suggest that students at WKU have enough study pressure to keep them enthusiastic and motivated to learn. Meanwhile, they have a clear understanding and effective management of their study pressure.

**New Language Acquisition** - From the answer, almost all the students feel uncomfortable with the new language environment since they have difficulty listening to others' conversations. Students at WKU are required to study in an all-English teaching environment, which is quite different from their previous educational experience. Therefore, they always get confused during the class when professors put forward an important question, but they don't know what it means. So, their learning progress will be very slow at first, and they cannot keep up sometimes, making them very uncomfortable. Nevertheless, a small number of students think they can adapt well to the environment. These students like the second language very much and usually have a high level of English before.

**English Language Center (ELC) Support** – The results for the question show that seven out of ten interviewees believe ELC support has a significant influence on their studies, which provides practical help, including instructions for academic writing, English listening training and oral English training.
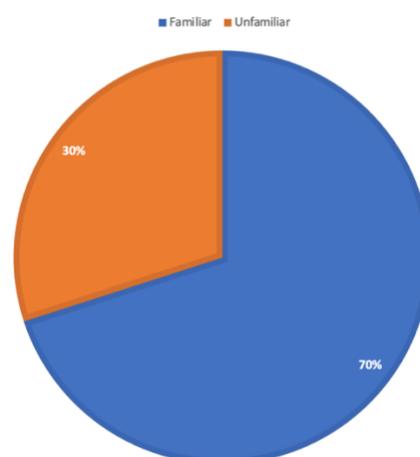


Figure 2: English Language Center Support

Figure 2 further shows that three out of ten interviewees do not use ESL and are unclear of its functions, while the other interviewees believe that ELC has provided them with practical help. It can thus be concluded that ELC does provide a great range of English learning support for

students, which is helpful for students to attain their academic achievement. However, the results also suggest that the university has not fully promoted ELC among students. Therefore, students do not fully understand the support ELC can provide and thus cannot make full use of it.

| Themes | Frequency | Rank |
|---|---|---|
| Academic Pressure | 9 | 1 |
| New Language Acquisition | 8 | 2 |
| ELC Support | 7 | 3 |

Table 7.2: Factors Related to Successful Learning Based on ESL Learners' Interview

In Table 7.2, the results of the interview are presented in three themes including academic pressure, new language acquisition and ELC support. The results show that 90% of interviewees believe academic pressure has the most significant impact on their studies and academic pressure ranks the highest amongst the three themes.

**The Most Significant Factor for Successful Learning for 21st century ESL Learners**

| Sources of Academic Pressure | Frequency | Rank |
|---|---|---|
| Language Barriers | 8 | 1 |
| Learning Patterns | 3 | 2 |
| Cultural Differences | 2 | 3 |
| Information Gap | 1 | 4 |

Table 8: The Most Significant Factor for Successful Learning for 21st century ESL Learners Based on the Interview

The following table further explores where the academic pressure comes from. Amongst language barriers, learning patterns, cultural differences and information gap, language barriers ranks the highest. 80% of students feel uncomfortable with the new language environment as they have difficulty following professors in class. Interviewees think the greatest difficulty is the language problem, including the dependence on translation software and English communication. In addition, in addition to the students who refused to answer and did not have difficulties, another student thought that different learning modes were difficult, two students agreed that cultural differences would cause trouble, and one student thought that the collection of learning materials was difficult.

**Conclusion and Recommendation**

**Conclusion**

This study was conducted mainly for determining the learning determinants for 21st century ESL learners, describing the determinants that have the most significant impact on them and making further implications of the difference of the learning determinants among different groups of students.

Through the study of these problems, we get the following conclusions. First, the most significant personal attribute of ESL learners in the 21st century is motivation. WKU students' motivation for learning English is dominated by instrumental and intrinsic motivations, which

are similar to the results of Nguyen and Habók's study (2022). Second, there are multiple factors related to successful learning for ESL learners in the 21st century, in which motivation, self-discipline and study environment have the most significant impact. Nevertheless, students can always be affected by the surrounding learning environment. the new language environment often causes trouble for most students, and the learning atmosphere will also affect students' learning enthusiasm. In addition, students prefer interactive and student-centered classes and are more willing to use technology to help them study. Besides, because of different majors, students are also affected by different factors to different degrees. Although both resources and professors are highly valued by students, those who need to do practical work are also concerned about having enough financial support, while those who are more collaborative are highly concerned about having good peers. The study also found that there is a positive correlation between the pre-university learning experience and academic performance in universities. However, the study didn't find any relationship between self-regulation software and students' GPA. Third, the factor that provides the most significant impact on successful learning among 21st century ESL learners based on the survey is motivation and the language barrier based on the interview.

**Recommendation**

Based on the conclusions, several recommendations are offered as follows:

For most ESL learners, language skills need to be further developed. Therefore, an internationalized language environment is important. To achieve that, in daily study life, students should avoid excessive use and over-reliance on translation tools.

Instructors can develop a more student-centered teaching pattern, which can timely adjust the teaching content and method according to the feedback of students, including adopting more seminar teaching modes and using interactive software to promote students' learning.

For the universities, international universities whose students are ESL learners need to fully promote the English Language Center among students and develop reward mechanisms to promote students' enthusiasm to attend ELC tutoring sessions.

For other researchers, since the sample size of the study is limited and there may exist selection bias, to better explore the determinants of learning amongst 21st century ESL learners, further research is still needed.

**References**

Ali, I., & Ahmed, K. (2019). "A study of the ESL students' motivational orientations: A case of public and private schools." *European Online Journal of Natural and Social Sciences, 8*(1), 188.

Almalki, K., Alharbi, O., Al-Ahmadi, W., & Aljohani, M. (2020). "Anti-procrastination online tool for graduate students based on the Pomodoro technique." *Learning and Collaboration Technologies. Human and Technology Ecosystems, 133–144.* https://doi.org/10.1007/978-3-030-50506-6_10

Bara, G. & Xhomara, N. (2020). "The Effect of Student-Centered Teaching and Problem-Based Learning on Academic Achievement in Science." *Journal of Turkish Science Education, 17*(2), 180-199.

Browne, R., Raeside, L., & Gray, G. (2018). "Gamification in Education: Productivity and Motivation Through Gamified Time Management Software." *European Conference on Games Based Learning*, 867–871.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

Fagereng, A., Mogstad, M., & Rønning, M. (2021). "Why Do Wealthy Parents Have Wealthy Children?" *The Journal of Political Economy*, *129*(3), 703–756. https://doi.org/10.1086/712446

García, F. A., Llamas-Salguero, F., Fernández-Sánchez, M. R., & Carrión del Campo, J. L. (2020). "Digital technologies at the pre-university and university levels." *Sustainability*, *12*(24), 10426.

Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation.* London: Arnold.

Gardner, R. C., & Lambert, W. E. (1959). "Motivational variables in second language acquisition." *Canadian Journal of Psychology*, *13*, 266-272.

Hakim, A. L., Fajri, M. B., & Faizah, E. N. (2022). "Evaluation Of Implementation Of MBKM: Does Academic Stress Affect On Student Learning Outcomes?." *International Journal of Educational Research and Social Sciences (IJERSC)*, *3*(1), 1-16.

Hussain, M. S., Salam, A., & Farid, A. (2020). "Students' motivation in English language learning (ELL): An exploratory study of motivational factors for EFL and ESL adult learners." *International Journal of Applied Linguistics and English Literature, 9*(4), 15-28.

Idris M., Hussain S., &Nasir A. (2020). "Relationship between Parents' Education and their children's Academic Achievement." *Journal of Arts and Social Sciences. VII* (2), 82-92.

Lin, D. T. A., M, G. & Kaur, M. (2018). "Kahoot! It: Gamification in Higher Education." *Pertanika J. Soc. Sci& Hum. 26*(1): 565-582.

Lu, Y.-C., & Berg, D. R. (2008). ESL Learners' Learning Motivations and Strategies. *International Journal of Learning*, *15*(1), 17–24. https://doi.org/10.18848/1447-9494/CGP/v15i01/45567

Murphy, L., Eduljee N. B., & Croteau, K. (2021). "Teacher-Centered Versus Student-Centered Teaching: Preferences and Differences Across Academic Majors." *Journal of Effective Teaching in Higher Education, vol.4,* no 1.

Nguyen, S., & Habók, A. (2021). "Vietnamese non-English-major students' motivation to learn English: from activity theory perspective." *Heliyon*, *7*(4).

Nguyen, T. H. (2022). "The effects of using online applications to teach vocabulary to English learners of HUFI in Ho chi minh city." *International Journal of TESOL & Education*, *2*(3), 32-42.

Osman, S. Z. M., Jamaludin, R., & Iranmanesh, M. (2015). Student Centered Learning at USM: What Lecturer and Students Think of This New Approach? *Journal of Education and Practice, 6*(19), 264-277.

Pinquart, M., Ebeling, M. (2020). "Parental Educational Expectations and Academic Achievement in Children and Adolescents—a Meta-analysis." *Educ Psychol Rev 32, 463–480.* https://doi.org/10.1007/s10648-019-09506-z

Saleh, S. (2019). "Critical Thinking as a 21st Century Skill: Conceptions, Implementation and Challenges in the EFL Classroom." *European Journal of Foreign Language Teaching*, *4(1).* DOI:10.5281/zenodo.2542838

Strawbridge, T., Soneson, D., & Griffith, C. (2019). "Lasting effects of pre-university language exposure on undergraduate proficiency." *Foreign Language Annals*, *52*(4), 776-797.

Tharumaraj, J. N., Krishnan, S., & Perumal, R. (2018). "Learners' perspective: 21st century essential fluencies." *English Teacher, 47*(3).

Torres, J., & Alieto, E. (2019). "English learning motivation and self-efficacy of Filipino senior high school students." *Asian EFL Journal, 22*(1), 51-72.

Van Herpen, S. G., Meeuwisse, M., Hofman, W. A., Severiens, S. E., & Arends, L. R. (2017). "Early predictors of first-year academic success at university: pre-university effort, pre-university self-efficacy, and pre-university reasons for attending university." *Educational Research and Evaluation, 23*(1-2), 52-72.

Xu, D., & Tsai, S. B. (2021). "A study on the application of interactive English-teaching mode under complex data analysis." *Wireless Communications and Mobile Computing, 2021*, 1-12.

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