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Expanding Horizons: A Randomized Controlled Trial on Adolescents' Career Information Acquisition

Sofia Badini
Wageningen University and Research

Esther Gehrke
Wageningen University and Research and
IZA@LISER

Friederike Lenel
Potsdam Institute for Climate Impact
Research (PIK) and University of Göttingen

Claudia Schupp
Technical University of Munich

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Abstract

We implement a randomized controlled trial in a low-income context to investigate whether students in lower-secondary school acquire information about potential career paths more effectively if this information is preceded by a task that allows students to explore their own interests and if the career information is ordered by the congruence between the careers and the student's personality. We find that self-exploration in combination with the personalized display increases student information acquisition. Students also read about more diverse career paths and, low-performing students in particular, shift their focus from occupations that require university education towards those that require a high-school degree and are potentially more achievable.

JEL classification

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Keywords

information acquisition, career guidance, education, field experiment

Corresponding author

Esther Gehrke
esther.gehrke@wur.nl

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1 Introduction

There is substantial evidence from all over the world suggesting that children tend to follow the educational and career path of their parents (Long and Ferrie, 2013; Hout, 2018; Hu and Qian, 2023). This pattern has sparked concerns about welfare losses arising due to the misallocation of talent (Lo Bello and Morchio, 2022; Almgren et al., 2025), limited social mobility (Alesina et al., 2021; van der Weide et al., 2024) and persistent inequalities (Chusseau et al., 2013; Raitano and Vona, 2015; Hegarty, 2023). In low-income settings, the tendency of adolescents to emulate their parents in their educational and occupational choices is even more concerning, as it risks creating self–perpetuating cycles of poverty (Mani and Riley, 2021; Gomes et al., 2023).

As such, it is not surprising that tailored career-guidance interventions have been shown to improve students' choices, particularly for students from lower socioeconomic backgrounds, because they allow students to consider occupational trajectories they did not previously know about or did not consider as potentially interesting (Bettinger et al., 2012; Cunha et al., 2018; Renée, 2025). However, such tailored interventions are costly and time-consuming, making them hardly implementable at scale, much less so in low-income settings. Technological advances, especially the dramatic increase in telecommunication access, in turn, offer promising alternatives to the in-person delivery of targeted advice. Yet, tailoring the internet- or app-based delivery of information to the specific needs of a diverse group of target beneficiaries is challenging. Career advice does not typically allow for one-size-fits-all recommendations. At the same time, simply providing information about diverse career paths does not guarantee that students also acquire that information, especially if it concerns options that they had not previously considered.

In this paper, we design and implement a low-cost, app-based intervention to study the extent to which personalizing career information improves students' information acquisition. In this application, students are first given a task that allows them to explore their interests and preferences, and are then shown career options ordered by the congruence with their interests. We evaluate whether this design leads students to acquire information about a more diverse set of careers and whether these careers are better aligned with the students' skills and interests. The experimental design also allows us to disentangle to which extent the results are driven by the students' self-exploration vis-à-vis the fact that the feedback they receive is personalized.[1]

The app-based intervention is the first part of a half-day career-guidance workshop we

[1]Both mechanisms may improve information acquisition; the first one by increasing students' self-awareness and expanding their mindset about what information they are willing to engage with, and the second one by reducing the student's uncertainty over whether such careers would align with their preferences.

implemented in 18 lower secondary schools in rural Cambodia, targeting ninth-graders. As grade nine is the last year of compulsory schooling, this workshop could still reach a large number of students, many of whom would not continue to high school.[2] Cambodia is a very relevant context to study information acquisition about potential careers. The country has experienced a rapid increase in educational attainment in the last few decades, creating a dramatic gap in education levels between generations, which also implies that parents are generally not able to support their children in their career choice. As a consequence, students have a very limited horizon of potential careers. Data from a pre-study conducted in 2019 shows that more than 85% of surveyed students of grade nine are interested in only three occupations: physician (general practitioner), teacher, or police officer.[3] Students are also rather oblivious about the educational pathways necessary to pursue such careers: for example, they largely misperceive the required educational degree for their aspired occupation, a phenomenon that is even more pronounced among children of lower socioeconomic background. At the same time, the skill-mismatch in Cambodia has been increasing over the last years: while there is a high demand for skilled workers, i.e. workers who went through technical and vocational education and training (ADB, 2016, 2018), the unemployment rate of college graduates is rising, driven partly by educational mismatch among university graduates (Sam, 2019, 2018).

To study the implications of personalizing career options for information acquisition within the career-guidance workshop, we randomly assigned 626 students to one of two treatment arms. The first group of students worked through an "Interest and Career Exploration Tool" (ICET), a digital application designed by the research team. The ICET allows students to explore their own interests and receive feedback on their personality types, after which students are shown that these interests can map into interesting career opportunities: Students are provided with detailed information on 18 careers, ordered by their congruence with the students' personality types. These occupations are relevant to the context and represent a substantial improvement, in terms of career outlook, over the professions of their parents.[4] The second group worked through a placebo application with a similar structure but without any interest- or personality-related content (its statements relate to

[2]We study the impact of the overall workshop on adolescents' occupational aspirations and their educational investments in Gehrke et al. (2026).

[3]This pattern is not unique to Cambodia. A recent OECD report (Mann et al., 2020), based on PISA data from 41 countries, finds that occupational interests of young people are concentrated in few occupations. Nearly half of the 15-year-olds interviewed report expecting to work in one of ten jobs, with this concentration being stronger for adolescents with a disadvantaged background and weaker academic achievements, and in low- to middle-income countries.

[4]59% of working parents are farmers, 16% are small-scale informal traders, and another 11% are construction workers (Gehrke et al., 2023).

gender norms and climate change). The placebo application displays detailed information on the same 18 careers, but in contrast to the ICET this information is in random order.

We find that self-exploration and personalized feedback increases information acquisition. Students actively read more job descriptions, spend more time reading about occupations that are beyond their usual focus, and shift their reading time from careers that require a university degree towards careers that require a high school diploma. We show that this effect is driven at least in part by mere self-exploration. ICET students express interest in a broader set of occupations compared to the placebo group even before receiving feedback on which occupations fit their personality.

We then study the implications of these findings by analyzing who is particularly responsive to the treatment. If personalizing feedback dissuades highly capable students from relatively disadvantaged socioeconomic backgrounds from pursuing higher education, then this intervention could potentially decrease overall welfare, and exacerbate inequalities rather than reducing them. We do not find any heterogeneities in treatment effects by the students' socioeconomic background, proxied by parental occupation, parental education, and family wealth. Instead, we find heterogeneities driven by academic ability: Students with lower grades at baseline become more interested in occupation descriptions that do not require a university education. We argue that personalizing information through a self-exploration task is especially beneficial for these students. To the extent that current academic performance predicts the amount of effort it takes students to complete high school, lower-performing students are those most likely to benefit from diversifying their information acquisition toward careers that require relatively lower levels of education. Interestingly, we observe this outcome even though students are not provided with feedback on their ability or school performance.

Our study engages with three different strands of the literature. Our main contribution is to the literature that studies how people search and process information in the lab and in the field (see the reviews by Haaland et al. 2023 and Capozza et al. 2021). Several studies show that these processes can be affected by (personalized) feedback or advice (see for example Eil and Rao 2011; Möbius et al. 2022; Fuster et al. 2022; Grohmann et al. 2022, and Bobba and Frisancho 2022, as well as de Koning et al. 2025 in the context of education). To the best of our knowledge, ours is the first study that examines career information acquisition among middle-school students in a low-income country, a group for which such information is highly consequential. We first document that, in the absence of additional incentives, students' information acquisition on prospective careers is highly selective, and biased towards high-education and familiar careers. We then show that introducing moments of self-reflection before content delivery can increase the diversity of information that students acquire. In

particular, we identify two channels –self-exploration and personalized feedback– through which this effect operates.

We also make minor contributions to two other strands of the literature, despite the short-run nature of our analysis, which may limit the direct relevance of the study's findings for long-term choices. *First*, we contribute to the literature on the effectiveness of information interventions to improve educational choice. This literature has largely emphasized the importance of correcting (mis)perceptions about costs and returns to schooling (Jensen, 2010; Bettinger et al., 2012; Dinkelman and Martínez A., 2014; Wiswall and Zafar, 2015a,b; Abbiati et al., 2018), particularly among disadvantaged students. *Second*, we contribute to the literature on career-guidance interventions in education. This literature largely focuses on how to increase college attendance in high-income countries (see Dynarski et al. 2023 for a review), and often uses costly "bundled interventions" that simultaneously target several aspects of educational choice, including exploring career prospects (see for example Renée 2025 and Loyalka et al. 2013). By emphasizing the importance of personalizing content delivery for information acquisition, which is a necessary first step to preference formation, our study offers insights into the possible design of such interventions.

The remainder of this paper is organized as follows. Section 2 explains the structure and content of the intervention, while Section 3 provides information on the experimental design (sampling, implementation of the intervention, and data collection). The empirical approach and results are discussed in section 4. Section 5 concludes.

2 Intervention

We developed an Interest and Career Exploration Tool (ICET), delivered in the form of a self-guided application on a tablet.[5] In the design of the application, we build on Holland's (1959; 1997) theory of vocational interest, also known as "hexagonal model." Holland's theory maps people's interests into six different personality types (visualized in Figure A.1),[6] namely realistic (doers), investigative (thinkers), artistic (creators), social (helpers), enterprising (persuaders), and conventional (organizers). The three strongest personality types form the Holland Code of an individual. Holland's theory posits that these personality types can be matched to occupations, and that individuals display higher job satisfaction if working in an occupation that matches their interests. A large literature provides evidence in support of the generalizability of Holland's theory (Meireles and Primi, 2015), its

[5]The tablets were generously provided by the NGO GoAhead: `http://www.goahead-ngo.org/` for the time of the intervention.

[6]Figures A.1 to A.6, as well as Tables A.1 to A.10 are available in Online Appendix A.

cross-cultural transportability beyond the North-American and European context (Aljojo and Saifuddin, 2017; Morgan and de Bruin, 2018), as well as on the positive association between vocational identity and work-related outcomes, such as job satisfaction, performance, and full-time employment (van Iddekinge et al., 2011; Stoll et al., 2017; Hoff et al., 2020).

The ICET is designed to incorporate these insights, as well as elements from a related literature that stresses the importance of self-exploration in the career-decision making process (Van Esbroeck et al., 2005; Germeijs and Verschueren, 2006).[7] It consists of two parts: an interest exploration tool (IET) and a career exploration tool (CET). The purpose of the IET is to help students reflect on their personal interests and to identify students' dominant personality types. The CET allows students to explore various career options, which are linked to the IET results. More details about the structure of both parts are given in the following and in the Online Appendix B.

The IET consists of three different tests, all based on the hexagonal model (Holland, 1997). The first test follows Athanasou (2000, 2007) and consists of 30 pairs of opposing statements, two for each combination of personality types. For each pair, students have to pick one statement (no skip is allowed). The statements cover a broad range of interests, are context-specific, relevant for ninth-graders, and exclusively activity-based (e.g.,"negotiating prices at a local market"). The second test is a widely used and internationally validated implementation of Holland's personality test, developed through a cooperation between the Hawaii Department of Education and the Occupation Information Network (O*NET) (Hawaii Department of Education, 2020). It contains 42 statements (seven per personality type), with which students can agree or disagree (unlimited selections allowed). The third test, created by the authors with the support of local experts, involves descriptions of five situations in which students are asked to select their preferred activities. These situational descriptions depict activities familiar or accessible to adolescents in rural Cambodia (e.g., a wedding). In each of these situations, students are shown a number of potential activities they would be performing (e.g., during a wedding: managing the guest list, performing on stage, decorating). Students can freely allocate three points between these six activities.

The three tests differ in format to limit student fatigue, maximize the potential for self-exploration, and prevent the results from depending on the design of one particular test. To enhance test comprehension, tests one and three also include pictures drawn by a local artist reflecting the content of the statements. These pictures are gender neutral to avoid inadvertently influencing students' choices: Either the gender cannot be inferred or both

[7]For a review of various career-decision making models available in the literature see Gati and Kulcsár (2021).

female and male individuals are shown (see Online Appendix B for examples).

From the responses across all three tests, the application computes scores that indicate the degree of alignment between the students' choices and each of the six personality types. The IET concludes with a personalized display of the personality types, highlighting the three with the highest scores (the Holland Code, see e.g. Figure A.2a).[8] Students have the option to click on each personality type to access brief descriptions outlining the main traits and interests specific to that type (adapted from the Career Compass published by the Delaware Departement of Labor 2019).

The second part of our electronic application, the CET, is dedicated to the exploration of potential careers, which are linked to the IET results. For this purpose, we compile 18 occupations which are relevant for ninth-graders in rural Cambodia, and can be grouped by the personality types in the model of Holland (following the work of National Employment Agency of Cambodia 2018) and by the three levels of educational attainment realistic in this sample: lower-secondary (grade 9), high school (grade 12), or university degree (as outlined in Table A.1). The intervention intentionally features occupations that require a variety of educational degrees to also speak to students who prefer to start working soon, and/or who do not have the capacities or the resources to continue with higher education.

In a 2019 pre-study that included 176 students –as many students as 28% of the final sample recruited for the experiment although from different schools–, we found that 85% of students in the target group aspire to the three following occupations: teacher, physician (general practitioner), police officer (see Table A.2). To increase the relevance of the application for students, we include these three occupations in the CET list. The remaining occupations are selected from the occupations reported in rural areas in the Cambodia Socio-Economic Survey (CSES) of 2017 and 2018.

The CET starts with a single page, on which all 18 occupations are listed in random order and without additional explanation (*c.f.* Figure A.2b). Students are asked to select up to three occupations they find potentially interesting. This unframed selection is incorporated to understand the extent to which the self-exploration task alone already changes students' engagement with potential careers. It is followed by a second page with (framed) career options, in which the same 18 occupations are shown again but this time grouped by personality types and, within a personality type, ordered by the educational level required for this occupation. The occupation groups (three per type) are displayed in personalized order, i.e., ranked by the student's individual personality scores. In addition, those occupation groups

[8]Importantly, by highlighting those three personality types with the highest score instead of just the one with the highest score, we follow Holland's recommended practice, accounting for the fact that an individual's personality is typically not one-dimensional, but a mixture of different types (Holland, 1997).

related to the three strongest personality types are explicitly highlighted (see Figure A.3a for an example). Except for the coloring, no encouragement is provided for students to focus on the first row profiles. From this second page, students can access, for each occupation, a pop-up window containing a detailed description of the job's tasks, responsibilities, societal value, and educational requirements (see Figure A.3b for an example).[9]

Once students access the overview page, they can log out immediately or spend up to 17 minutes reading about individual occupations. Throughout this time, they can move freely between different occupation descriptions and also return to previously opened ones if desired. The imposed upper limit on reading time was intended to encourage students to prioritize their reading. Pilot data indicated that students required approximately two minutes to carefully read a single occupation profile. Thus within 17 minutes, students could engage in-depth with around eight different occupations. Allowing for substantially more time might have led to reduced attention and information overload, diminishing the quality of processing individual profiles.[10]

To ensure comprehension and adherence to instructions, research assistants were available to guide students through the tests at the time of the intervention. Students could work independently once they understood the procedures, with the option to ask questions or access a pop-up window for additional instructions. Importantly, assistants were directed to provide only practical instructions and not to interfere with students' choices.

This intervention is extremely cheap. The fixed cost of designing and programming the ICET application was approximately USD 5,500. The variable expenses of delivering the tablets to schools and supporting students in working through the content amounted to about USD 300 per school (5 per student). Given the increase in smartphone ownership among young adolescents in the country, a new version suitable for smartphones could be delivered online at essentially no variable cost, although in that case students would not be able to get personal support in cases of questions.

[9]Note that the app explicitly does not include information on earnings potential for two key reasons. Primarily, we aimed to encourage students to focus on a job's actual content and how well it aligns with their interests. Additionally, even if we had wanted to provide earnings data, this would have been very difficult: data on income potential by occupation (e.g. based on Cambodia's Socio-Economic Survey) is very scarce and highly variable within occupations, thus it could have created wrong expectations.

[10]This time limit seems to have been binding for only 13 students (or 2% of the full sample) who kept reading for the full 17 minutes and spent less than 2 minutes on the last job profile before being cut short with the end of the session.

3 Experimental Design

3.1 Sample

We implemented our career-guidance workshop in 18 schools in Northwest Cambodia between February 17 and March 16, 2020.[11] These schools represent a non-random subset of lower-secondary schools in rural Cambodia. However, a comparison with national statistics (Ministry of Education, Youth and Sport, 2019) suggests that the sample schools are broadly similar to rural schools (baseline administrative data on sample schools was collected by the project team before the intervention took place). The size of Grade 9 in the selected sample is nearly identical to the average rural school, with 89 students distributed across 1.89 classes in the selected sample and 90 students distributed across 1.99 classes in rural schools. Examining class size and composition, both the average number of students (47) and the percentage of female students (54%) per class are remarkably similar between the selected sample and the rural average.

3.2 Treatment Arms and Timeline

Out of the 862 students invited to participate in the career-guidance workshop, 783 actively took part.[12] On the day of the workshop, students were randomly allocated to one of three treatment arms: the main treatment arm (ICET), a placebo arm (placebo), and an information-only arm (control), by blindly drawing numbered badges from a box.

Out of the 783 students, 315 were allocated to the ICET arm, 311 to the placebo arm, 151 to the control arm, and 6 arrived after randomization had taken place and activities started (these students were allowed to participate in the activities of the control arm and will not be studied in this paper). Students assigned to the three arms participated in different activities of the workshop: The first part of the workshop, the app-based intervention, was randomly assigned, while all students participated in the second part of the workshop, an information session. Surveys were implemented at the beginning, in the middle and at the end of the workshop. The outline of the workshop per arm is summarized in Table A.3, and is described in the following.

First, all students completed the baseline survey. The questionnaire was filled by students individually on a tablet, with support from enumerators where necessary. This baseline

[11] Due to the global COVID-19 pandemic, the data collection had to be interrupted a few weeks early. This reduced the number of schools at which we conducted the workshop from 30 schools to 18. More details on how these schools were selected, and their location can be found in Gehrke et al. (2026).

[12] Students (and their parents) received advance notice about the workshop and were informed that participation was voluntary. This may affect the external validity of the experimental results, but not the internal validity.

questionnaire covered basic socioeconomic characteristics, and questions related to expected high school distance and costs.

Afterwards, students participated in the first part of the career-guidance workshop: Students in the ICET arm worked through the main application, students in the placebo arm worked through a different application, and students in the control arm participated in a group-based game outdoors. The placebo app has a setup similar to the ICET, but asks questions on gender norms and climate change awareness instead of questions on the students' interests, and does not provide any feedback at the end of the first part. We chose these two topics to create a situation in which students need to focus and engage in a way comparable to students working with the ICET but without any relation to aspirations or (career) interests. In the career exploration part of the placebo application, the same occupations are shown and are also grouped by personality type as in the ICET, but the groups are displayed in random order. As in the ICET, the top row occupations are displayed in brighter colors. Immediately following the app-based intervention and still in their assigned rooms, all students took a midline survey. The midline survey contained questions about perceived constraints to attending high school, and asked students to interpret a graph about high school-related costs.

After a short break, all students were invited to participate in the second part of the workshop, namely an information session about higher education. The information session had three key components: essential facts about the Cambodian education system, detailed information on nearby high schools and vocational schools suitable for students' transition after completing grade 9, and details on available scholarships for students to pursue. School-specific information included student numbers, proximity to the nearest school along with time and travel expenses, details about admission procedures, living costs, school-related expenses, and information on accessible scholarships. Although the overall structure of the information remained consistent across schools, it was customized to suit the specific location of each school. Finally, in the endline survey we again elicited expectations about high school-related costs, as well as educational and occupational aspirations.

The whole career-guidance workshop took about 5 hours (including breaks and the time required to administer all 3 questionnaires), and the ICET alone about 90 minutes.

3.3 Baseline Balance

In the main analysis, we focus on the 626 students that were allocated either to the main treatment arm (ICET) or to the placebo arm because the main outcome of interest, i.e.

career information acquisition, is not available for students in the control arm by design.[13]

Summary statistics of baseline characteristics are shown in Table 1. As pre-specified, we focus on student age, gender, and grades, on parental background, and on student answers in the baseline questionnaire (specifically, their expectations regarding high school costs). The results of balance checks show that the randomization of students into treatment or placebo arm was largely successful: Out of the 20 variables that were tested, only one displays differences that are statistically significant at the 5% level: the student's pre-intervention grade (the other variables are not significant at the 10% level). Reassuringly, the inclusion of this variable in the estimation does not affect the results.

The sample consists of slightly more female than male students, who are on average 15 years old at the time of the interview. Students have 2.5 siblings on average and state to be relatively poor: Their self-reported financial worries range around eight on a scale from one to ten. When asked how wealthy their families are relative to others in the village, most students report that their families are generally worse off. Four out of five students come from agrarian families, and less than 10% of the students have a parent who carries out an occupation that requires more than primary education. Almost half of the students have at least one family member who is currently abroad for work. Students in our sample live an average of four kilometers from the school and about ten kilometers from the district town and the next closest high school. According to teacher reports, students are reasonably literate and reasonably prepared for high school. Student absence is at roughly 2 days per month.

4 Empirical Approach

4.1 Estimation Strategy

Our intervention is designed to encourage students to explore their own interests, and to show them that these interests can map into interesting careers. We ask whether this changes the way in which students acquire information that is made available to them.

With the first group of outcomes, we focus on students' reading behavior in the career exploration tool and test if students in the ICET arm acquire more information on potential careers compared to students in the placebo group. In particular, we consider (i) how many pages containing occupation descriptions the student opened, (ii) the total time spent reading such occupation descriptions (maximum is 17 minutes), (iii) the median reading time per

[13]Students in the control arm did not receive the app-based career information, but instead were playing a game outdoors. The control arm was included to study the effects of engaging with career information on high-school information processing. These outcomes are discussed in Section 4.4.

page, and (iv) how many job descriptions the student actively read. This last outcome was constructed ex-post because many students opened some job-description pages for just a few seconds, which would not give them enough time to absorb any of the information. The median reading time per page is 46 seconds (0.77 minutes), which should be the very minimum time students need to process most of its content (in the pilot, students needed roughly 2 minutes to read one page). The 99th percentile of reading time per page is 6.17 minutes, which should be more than sufficient to read through the full text, even for students with low literacy. We therefore only count the pages on which the student spent between 0.77 and 6.17 minutes for this outcome.[14]

With the second group of outcomes, we test whether ICET students acquire information about a more diverse set of potential careers compared to students in the placebo group. Since 85% of students in our pre-study named one of just three occupations when asked about their future career, we are particularly interested in whether the intervention made students read outside this reference window. Therefore, we include as first outcome the fraction of the total reading time spent on occupations outside this 85% reference window. In addition, we focus on the fraction of the overall reading time that is spent on occupations requiring (i) a lower-secondary degree, (ii) a high school degree, and (iii) a university degree.

Finally, with the third group of outcomes, we test whether self-exploration alone can already expand students' horizon. To identify the role of self-exploration alone, we focus on outcomes we elicited before showing the students the list of occupations in personalized order. We estimate treatment effects on (i) the number of jobs (out of three) a student clicks on when presented with the unframed list of 18 jobs and asked "Which of these jobs do you think could be interesting to you?" (first page of CET, see Table A.3), (ii) how many of those are outside the 85% reference window, and (iii) which fraction of these are associated with different levels of education.[15]

As pre-specified, we estimate the following equation:

$$Y_{is} = \beta_0 + \beta_1 ICET_i + \beta_2' X_i + \lambda_s + \varepsilon_{is}. \tag{1}$$

with Y_{is} being the outcome of interest as listed above for student i in school s. $ICET_i$ is a dummy indicating whether the student worked with the ICET application (=1) or the

[14]We also cut at the 99th percentile becuase we observed during the intervention that a number of students were un-engaged with the app, and simply stopped reading midway, but did not close the page or log out of the app. See Figure A.4 for the distribution of reading time per page in the sample. The chosen time frame should be long enough for students to properly process its content, while successfully excluding those students that did not engage with the content at all.

[15]This last group of outcomes is pre-specified in our pre-analysis plan (Gehrke et al., 2020), while the first two groups of outcomes are necessary to understand the observed effects. The remaining outcomes that were pre-specified as well as endline aspirations are discussed in Section 4.4.

placebo application (=0). X_i is a vector of pre-specified student and parent characteristics, in particular, students' gender, age, and the baseline grade (sum over the three main subjects and averaged over the months December and January) and whether any of the students' parents is a farmer. λ_s are school fixed effects. ε_{is} is the error term.

We adjust test statistics for multiple hypothesis testing by computing Romano-Wolf p-values. For the purpose of this analysis, we group outcome variables per table, and perform the analysis separately for each group. We also compute wild-cluster bootstrap p-values (webb-weights, null imposed, 999 replications) clustered at the school level to account for any potential correlation in outcomes within schools.

We consider the potential for spillover effects on our main results to be negligible for the following reason. During the app-based intervention, there were no breaks or opportunities for interaction between students or across treatment arms. The midline survey was administered immediately after the app-based intervention. As such, all outcomes used in our main analysis were collected within one continuous session, during which students in the ICET arm were in a separate room from those in the placebo arm. Even for outcomes collected in the endline survey, which we discuss in Section 4.4, we expect spillovers to be minor at best, given that the break between midline survey and information session was very short (15 minutes) and students from treatment and placebo arms may not even have been aware that they worked with different versions of the app.

4.2 Main Results

Results for the first group of outcomes are presented in Table 2. We include controls stepwise to gauge the robustness of our findings, and report heteroskedasticity-robust standard errors, as well as Romano-Wolf p-values and wild-cluster bootstrap p-values throughout.

We find that ICET students acquire more information on potential careers than students in the placebo group (first group of outcomes). Students in the ICET arm do not open more pages containing occupational descriptions —if anything, they open slightly fewer pages ($\beta = -.153$ over a placebo group mean of 6.52, not statistically significant). The total reading time also does not seem to be higher on average in the ICET arm (it is 8.5 minutes on average in both groups), while the median reading time per page is lower (by 0.24 minutes over a placebo group mean of 1.78, result statistically significant with a p-value between 0 and 0.099, depending on the adjustment we use).[16] However, the ICET affects the number of pages that students actively read (rather than just open the page and close it right away). When counting pages that students read in the time range between 46 seconds (p50) and 6.17

[16]This analysis excludes 25 students who do not open any occupational descriptions. Whether any descriptions are opened is balanced between the ICET and placebo arm, see Table A.4.

minutes (p99), we find that students in the ICET read about 0.34 additional pages (13% gain over the placebo mean of 2.54).[17] The statistical significance of this result, while contingent on the p-value adjustment, is close to the 10% level and suggests that, compared to students in the placebo arm, ICET students do not necessarily engage with more information in terms of absolute time, but rather that students read in a more focused way, and are thus able to read the descriptions of more careers.

Next, we examine the type of occupation-related information that students acquire (second group of outcomes). To do so, we restrict our attention to the 601 students who read at least one occupation description (as shown in Table A.4, this outcome is not affected by the ICET). We find considerable differences between students in the two arms (*c.f.* Table 3). In the placebo arm, students spend about 47% of their reading time on occupations within the 85% reference window, as well as 38% of the total reading time on occupations that require lower-secondary education, 16% of their reading time on occupations that require high school, and 46% of their time on occupations that require a university degree. By contrast, ICET students spend more time reading descriptions of jobs beyond their usual focus. In particular, they spend 9 percentage points (pp) more time reading about occupation outside of the 85% reference window (17% increase over the placebo group mean, statistically significant at the 1% level). Importantly, reading time also shifts away from careers that require a university degree. In the ICET arm, students spend an additional 6 pp of their time (39% increase over placebo group mean) on occupations that require a high school degree, and 8 pp less (17% decline over placebo group mean) on occupations that require a university degree. Both effects are statistically significant at the 1% level (at the 2% level using the wild-cluster bootstrap p-values).[18]

We further investigate whether the shift is consistent with the order in which occupations are displayed, and hence aligns with the students' personality types. In Figure 1 (panel a), we plot the distribution of the three main personality types in our sample.[19] The most

[17] In Table A.4, cols.5–8, we show that the results are consistent when constructing the same outcome with alternative upper bounds (75th and 95th percentile of reading time).

[18] We complement this analysis with two alternative proxies for information acquisition: In Table A.5, we focus on the total reading time dedicated to different occupations. In Table A.6, the outcome is the count of job descriptions actively read (i.e. on which students spent between 46 seconds and 6.17 minutes) that belong to the four different categories. The results are unchanged.

[19] Because Holland-code based personality tests highlight the three most congruent personality types, rather than just one, the distribution should be interpreted as the probability of each type to be among the top three personality types in the sample. In other words, we give each of the top three personality types per student a weight of one third, and then average over the 311 students for which the application properly recorded their choices. For four students the application malfunctioned either while taking the tests or while reading the occupational descriptions. In either case, the application had to be restarted and students were allowed to jump right back to where they left (but with the disadvantage that the order of the occupations were not personalized anymore and that previous choices were overwritten).

common personality type in this group of students is social, followed by conventional and investigative. The three least common personality types are enterprising, artistic, and realistic. Both ICET and placebo students spend most of their time reading about occupations that are associated with the social and the realistic types (Figure 1, panel b). We find statistically significant differences in reading time between ICET and placebo for three of the six personality types.[20] For all personality types, the allocation of reading time in ICET moves toward the distribution of types in this sample (that is, less reading time for social and realistic, more reading time for all other types).

With the third (and final) set of outcomes we aim to uncover if the observed effects on information acquisition are accompanied by a shift in students' personal mindset regarding their careers trajectories. We examine the effect of the self-exploration task alone on stated occupational interest, as elicited in the first page of the CET (see Table 4). We find that students in the ICET arm already show interest in more diverse occupations even before the occupations are presented in personalized order. Students express interest in a higher number of listed occupations, and in a higher number of occupations outside the 85% reference window. Since the maximum number of occupations that can be selected is three, this effect is not purely mechanical. ICET students also tend to select more occupations that only require a high school degree, rather than a university degree (even tough the educational requirements have not yet been communicated at this stage).

This result shows that self-exploration alone can explain a substantial share of the observed effects on reading behavior and that our results are not merely driven by the fact that students who are shown career options in personalized order perceive this information to be more relevant. It also speaks of the robustness of our design, given that the personalized feedback may be exposed to errors in how students' personality types are mapped or linked to different occupations.

4.3 Treatment Effect Heterogeneity

We next explore for whom the ICET shifts the focus away from occupations requiring university. While interest-based feedback is less prone to equity concerns than feedback based on ability,[21] exploring heterogeneous effects is important to ensure that the intervention

[20] T-test p-values for a difference in means are 0.026 (social), 0.009 (conventional), and 0.099 (artistic).

[21] The latter is controversial because of methodological and equity concerns. Measuring and scaling students' achievement is a non-trivial task, and can lead to a biased assessment of true ability (Jacob and Rothstein, 2016). Furthermore, Goulas and Megalokonomou (2021) show that feedback on relative performance can generate asymmetric effects, boasting the performances of high-achievers while depressing those of low-achievers. This result generalizes to situations were feedback can be interpreted as good news or bad news (Eil and Rao, 2011).

does not discourage qualified students with relatively low socioeconomic backgrounds from attending university, which would have negative welfare implications.

We find that neither gender nor parental background can explain the shift in reading behavior (Table 5). To account for the latter we consider parental occupation (whether parents are farmers), parental educational attainment (whether parents have a job that requires higher education), and family wealth (self-reported by the students and reported by the teachers). Yet, we find a clear differential effect by academic ability. Students with lower grades, measured by their total grade in the three main subjects (Khmer, Math, and English) averaged over the two months before the intervention, are more likely to focus on occupations requiring high school graduation only, thus occupations that are potentially a better match for students with lower academic ability.

These heterogeneities are also evident when plotting the non-parametric association between reading time and baseline grades for ICET and placebo students separately (*c.f.* Figure A.5). Compared to the placebo, ICET students who have lower-than-average grades spend less time on occupations requiring a university education, and more time on occupations requiring only a high school diploma. The difference tends to be more pronounced the lower the student's baseline grade is, while it disappears for students with average or above-average performance. There are no meaningful differences between both groups in the acquisition of information concerning occupations that require only a lower-secondary degree.

This finding is striking because the career-guidance workshop did not provide any feedback on the students' academic ability, but rather intentionally focused on students' interest. Furthermore, this differential effect by ability is by design not driven by the ICET's framed job selection page, as occupations are grouped by personality type and educational requirement both in the ICET and in the placebo. The only difference is that ICET students see an ordering by personality types based on their test results, while the ordering is random in the placebo arm.

Therefore, we argue that this pattern is due to the ICET's self-exploration task. This task was intended to broaden the students' mindsets regarding career trajectories, and successfully did so: *All* students diversified their information acquisition. Moreover, students with relatively low baseline academic performance spontaneously responded to the task by showing more interest in career options requiring lower levels of formal education. This shift in behavior highlights significant information gaps regarding (achievable) career opportunities, personal preferences, or both—gaps that exist even before considering employment prospects and compensation, and that our intervention is able to address.

To the extent that baseline grades are informative about inherent student ability, this re-

sult suggests that our intervention might have positive long-run effects also on low-performing students. Low-performing students potentially face more difficulties during high school and beyond than high performing peers, even if this gap may disappear over time. By allowing students to learn about alternative careers that are achievable with a high school degree rather than a university degree, this intervention may increase the perceived benefit of obtaining a high school degree. The high school degree becomes an end in itself, rather than a means to an end. This in turn could reduce student frustration, enhance perseverance during high school, and reduce the number of students that drop out early. Since we observe that this sorting does not correlate with socioeconomic background, this efficiency improvement does not seem to come at the cost of reducing social mobility. Rather it could increase social mobility if low-performing students would have otherwise dropped out from a demanding educational path and were forced to revert to the same occupation as their parents.

Our findings should not be read as evidence that students with lower grades are inherently better matched to non-university careers. Instead, we interpret them as showing that students who are struggling in the current system are especially responsive to informational nudges that broaden their horizons. Whether these short-run responses translate into long-term outcomes in higher education remains an open question and a promising direction for future research.

4.4 High-school Information Processing and Aspirations

At the time of registering the experiment, we hypothesized that shifting students' information acquisition towards a more diverse set of occupations may, in turn, affect their rationale to learn about paths to higher education, for example, because students become more interested in jobs that require a high school degree. We prespecified two sets of outcomes: *First*, to measure students' confidence in pursuing higher education, we consider two outcomes measured in the midline survey: (i) the weight that students assign to constraints that could keep them from pursuing higher education (students are asked to rate five constraints on a scale from zero to ten, we take the average rating), and (ii) the students' interpretation of the graph that depicts average educational expenditures per grade in Cambodia (i.e., the students' guess on the absolute value of the educational expenditure that corresponds to grade 10). *Second*, to measure information processing, we use five outcomes from the endline survey (collected after the information session). In particular, students' expectations over (i) the travel time to high school by motorbike (in minutes), (ii) the costs of transportation per month when going to high school (e.g., by motorbike), (iii) the cost of extra classes (i.e. informal tuition) per month, (iv) the annual expenses for school material when going to high

school, and (v) the accuracy of students' responses when asked about the non-governmental organizations that provide scholarships for the nearest high school.[22]

However, we find no evidence that students in the ICET arm are more likely to see themselves as being able to go to high school. In the midline survey, students in the ICET arm do express the same amount of concerns regarding their ability to attend high school, and they also do not interpret a graph depicting high school costs in a more favorable way (*c.f.* Table A.8). We also find no evidence for differential information processing over the costs of attending high school between ICET and placebo students (as elicited in the endline survey). Students in the ICET arm do not report more accurate educational costs nor are they better able to recall the information on high school scholarship opportunities provided in the information session (see Table A.9). They also do not update their beliefs more strongly (see Figure A.6). Instead, all students update in the correct direction, and this is not differential by treatment arm.[23] This null result is likely explained by the fact that the high-school related information was perceived as relevant by a similar proportion of students in both groups. After all, information acquisition in the ICET arm shifted away from occupations requiring university education, but towards those that require at least high school.

Finally, although this was not prespecified, we consider students' aspirations reported in the endline questionnaire as potential outcome. We find that educational aspirations do not shift in a statistically significant way in the short-run, although the signs are consistent with the findings on information acquisition (see Table A.11). Similarly, occupational aspirations are not significantly affected. We ask for the occupations (up to three, open ended question) students would like to work in as adults. While students in treatment are somewhat more likely to report an occupation outside the 85% reference window as their first choice, this reverses for the second and third choice. None of the effects differ statistically from zero (see Table A.12). The relatively short time between the informational intervention and the endline survey may not have been sufficient for students to absorb and integrate the

[22]For these outcomes, we have pre-specified to also include the control arm, as students in this arm also participated in the high school information session. However, given that this arm displays statistically significant differences along 6 out of the 20 tested characteristics, see Table A.7, results are reported twice: those without the control arm are referenced (and available in Appendix A), and those with the control arm are available in Appendix C. These observed imbalances cannot be explained by flaws in the randomization process, since treatment status was assigned by students blindly drawing a badge from a box, precluding manipulation. We investigated whether the imbalances could arise by pure chance by simulating 10,000 random allocations. These simulations suggest that most observed imbalances are indeed due to chance. Thus, most likely the imbalances are a consequence of the intervention's interruption and the resulting reduced sample size.

[23]In Table A.10, we use the absolute difference between endline beliefs and the true value minus the absolute difference between baseline beliefs and the true value as outcome. Again, we find no difference in belief updating between treatment and placebo.

new information into their longer-term goals. Reconsidering educational and career plans may take time and involve discussions with family or peers, in addition to weighing new information against existing beliefs. It could also be, however, that the incremental effect of personalizing the information relative to the other workshop components was too small to detect changes in aspirations given the limited sample size.

5 Conclusions

In this paper, we develop an application for career guidance that provides students with information about potential careers at various levels of educational requirements. We then study whether giving students the opportunity to explore their own interests and providing them with personalized ordering of these career opportunities changes the way in which students acquire occupation-related information.

When students receive career information without room for self-reflection or personalized feedback, their information acquisition is highly selective and biased towards careers requiring higher education levels and those in their reference window. By contrast, students who work through the ICET app, rather than through the placebo application, acquire more information about occupations outside their reference window, and about occupations that require only a high school degree rather than a university degree. We find similar shifts in students' stated occupational interests before the information is ordered by personality types. This suggests that at least part of the observed effect on information acquisition can be attributed to the fact that students become more open to alternative career paths as they engage with their own interests and reflect on their personality.

We also find that, while the app is successful in diversifying information acquisition for all students, those who perform relatively worse in school compared to the average tend to read more about jobs that require a high school diploma only. In contrast, we find no heterogeneous effects by parental occupation or wealth.

These results suggest that giving students tools to explore their interests, along with personalized feedback, can help them acquire information that is in principle self-relevant but in practice not sufficiently sought after, potentially because it is not perceived as such or does not confirm the students' priors.

A clear limitation is that our results cannot speak to whether this more diversified information acquisition would lead to changes in preferences or aspirations in the long-run. In related work (Gehrke et al., 2026), we do find evidence that the career-guidance workshop as a whole influenced aspirations and educational trajectories several years after the intervention. However, that evaluation cannot isolate the effect of individual program components

or of variants in the information provision in the ICET. This is an area for future work.

Notwithstanding the inherent limits of light-touch information interventions, this paper identifies channels that help overcome the students' narrow search for information, with implications for the design of future interventions in the very policy-relevant context of adolescents' occupational choice. Given the ample evidence that children occupational trajectories are heavily influenced by parental background, well-designed information interventions can be an important avenue to increase inter-generational mobility and reduce inequalities.

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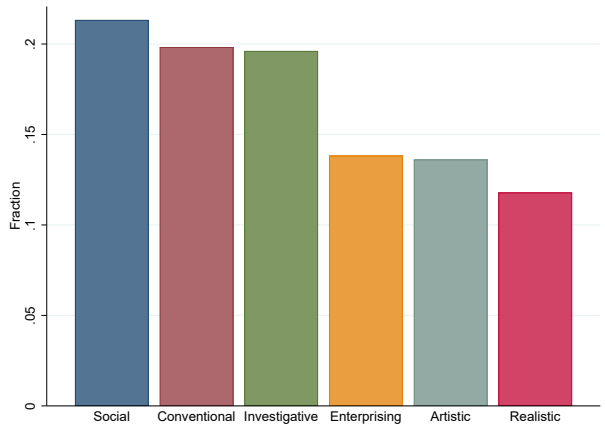
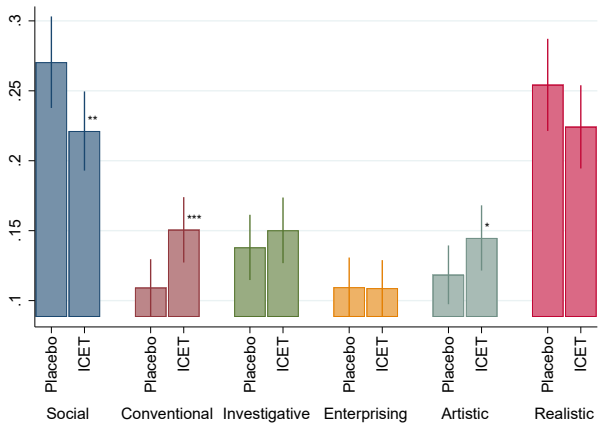
Figures

Figure 1: Holland Code

(a) Distribution in ICET



(b) Reading Time by Arm



Notes: Panel (a) shows the distribution of the three strongest personality types (Holland Code) in the ICET arm, based on students answers to the personality tests. We take the simple average over the three strongest personality types. Panel (b) shows the relative reading time by Holland Code of the occupation in the ICET and Placebo arms for 601 students who read any job description. */**/*** denote significance levels at 10/5/1 percent respectively (t-test of differences between treatment and control arm).

Tables

Table 1: Balance Table

Variable	(1) Mean ICET	(2) Mean Placebo	(3) ICET - Plac
Female	0.54	0.53	0.00
	(0.50)	(0.50)	(0.95)
Age	15.37	15.37	-0.00
	(1.05)	(1.21)	(0.96)
Num siblings	2.50	2.58	-0.08
	(2.06)	(1.69)	(0.60)
Financial worries (0-10)	7.75	7.94	-0.19
	(2.86)	(2.82)	(0.40)
Wealth rel. to others (1 = much more, 5 = much less)	3.30	3.30	-0.00
	(0.70)	(0.59)	(0.96)
Any parent is farmer	0.78	0.77	0.01
	(0.41)	(0.42)	(0.86)
Mother or father high educ job	0.09	0.08	0.01
	(0.29)	(0.27)	(0.50)
Any fam. members migrated	0.47	0.42	0.05
	(0.50)	(0.49)	(0.20)
Wealth (reported by teacher, 1-5)	2.92	2.92	0.00
	(0.53)	(0.47)	(0.91)
Literacy (reported by teacher, 1-5)	3.23	3.26	-0.04
	(0.88)	(0.84)	(0.60)
High-school preparedness (reported by teacher, 1-5)	3.16	3.22	-0.06
	(0.80)	(0.85)	(0.38)
Distance to school (km)	3.98	3.99	-0.01
	(3.86)	(4.02)	(0.99)
Distance to district town (km)	9.96	9.74	0.22
	(6.47)	(6.45)	(0.68)
Distance to high school (km)	9.33	9.27	0.06
	(6.59)	(6.37)	(0.90)
Baseline Grade (main subjects, std.)	-0.31	-0.15	-0.16**
	(0.90)	(0.96)	(0.03)
Baseline Absence (Dec&Jan)	1.63	1.59	0.05
	(1.88)	(1.96)	(0.76)
Expected costs high school: total	291.52	274.86	16.65
	(369.41)	(331.81)	(0.55)
Expected costs high school: extra classes	15.39	16.41	-1.02
	(14.28)	(13.86)	(0.37)
Expected costs high school: transport	22.96	22.19	0.77
	(22.09)	(19.94)	(0.65)
Expected costs high school: material	35.80	35.57	0.23
	(54.90)	(53.75)	(0.96)
Observations	315	311	626

Notes: (1) and (2): standard deviations in parentheses; (3): derived by regressing variable of interest on treatment dummy, robust p-values reported in parentheses . */**/*** denote significance levels at 10/5/1 percent respectively. The baseline grade is the sum of Math, Khmer and English (averaged over the months December and January and standardized). The highest achievable points in Khmer, English, and Math are 100, 50 and 100, respectively. Absences are absent days per month (note that for one school this information is missing).

Table 2: Engagement with the Career Exploration tool

	No. of pages opened		Total reading time		Median time p/page		No. of pages read	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	-0.285	-0.153	-0.216	-0.141	-0.247	-0.238	0.299	0.341
	(0.395)	(0.394)	(0.341)	(0.344)	(0.112)**	(0.111)**	(0.162)*	(0.160)**
	[0.695]	[0.891]	[0.695]	[0.891]	[0.093]	[0.099]	[0.146]	[0.099]
	{ 0.601}	{ 0.768}	{ 0.772}	{ 0.849}	{ 0.005}	{ 0.013}	{ 0.221}	{ 0.133}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	6.52		8.64		1.78		2.54	
Observations	626		626		601		626	

Notes: OLS estimates. Number of pages opened is the total number of job descriptions that were opened. Total reading time is the total time the students spent reading job descriptions (in minutes). Median time p/page is the median time spent on a job description page, conditional on opening it. Pages read is the number of pages a student spent on long enough to read through the text (between 0.77 minutes (46 seconds) and 6.17 minutes, i.e. the 50th and 99th percentiles of reading time per page). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing are in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table 3: Information Acquisition in the Career Exploration Tool

	Occupations are outside 85% ref window		Occupations' educational requirements: lower secondary		high school		university	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	0.096	0.090	0.023	0.015	0.062	0.062	-0.085	-0.078
	(0.026)***	(0.026)***	(0.024)	(0.024)	(0.017)***	(0.017)***	(0.025)***	(0.025)***
	[0.001]	[0.002]	[0.340]	[0.523]	[0.001]	[0.001]	[0.002]	[0.004]
	{ 0.000}	{ 0.003}	{ 0.344}	{ 0.536}	{ 0.013}	{ 0.007}	{ 0.006}	{ 0.023}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	0.53		0.38		0.16		0.46	
Observations	601		601		601		601	

Notes: OLS estimates. The outcome variable is the fraction of reading time dedicated to occupations outside the 85% reference window (cols. 1-2), and to occupations that require at least lower-secondary education (cols. 3-4), high school (cols. 5-6), and a university degree (cols. 7-8). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing are in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table 4: Stated Occupational Interests

	Total occup. selected		No. of occup. outside 85% ref window		Fraction of selected jobs requiring lower secondary		high school		university	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ICET	0.250	0.250	0.197	0.178	0.014	0.010	0.055	0.053	-0.070	-0.063
	(0.080)***	(0.080)***	(0.072)***	(0.073)**	(0.027)	(0.027)	(0.019)***	(0.019)***	(0.029)**	(0.029)**
	[0.009]	[0.010]	[0.017]	[0.042]	[0.589]	[0.707]	[0.013]	[0.028]	[0.028]	[0.052]
	{ 0.022}	{ 0.020}	{ 0.018}	{ 0.024}	{ 0.548}	{ 0.662}	{ 0.011}	{ 0.011}	{ 0.005}	{ 0.008}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓		✓
Placebo Mean	2.04		0.97		0.32		0.13		0.55	
Observations	626		626		577		577		577	

Notes: OLS estimates reported. This table compares students' choices in the unframed job selection between students in ICET compared to students in the placebo. Individual controls include gender, age, and baseline grade in main subjects. Robust standard errors are in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table 5: Treatment Effect Heterogeneity - Reading Time Dedicated to Occupations Requiring High School

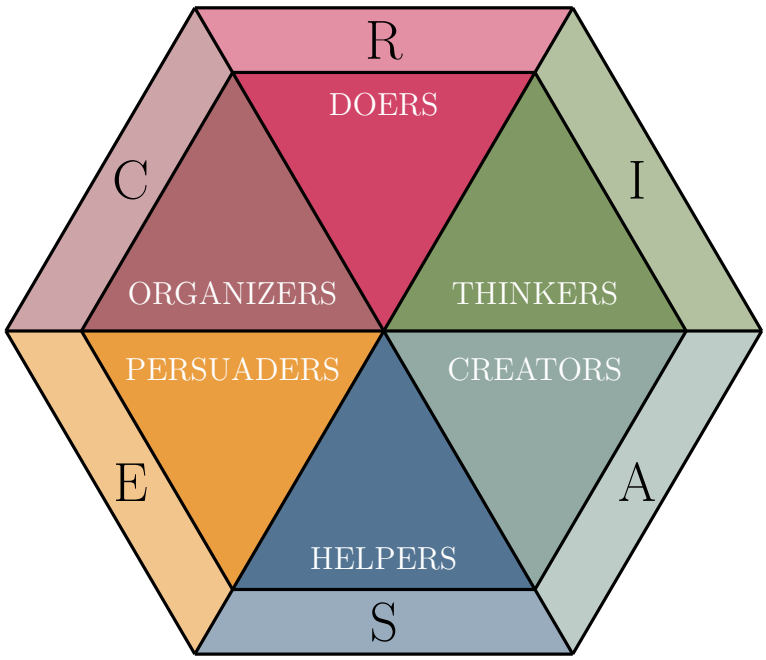
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ICET	0.068	0.055	0.045	0.092	0.018	0.061	0.060
	(0.026)***	(0.017)***	(0.022)**	(0.097)	(0.089)	(0.035)*	(0.018)***
ICET × Female	-0.011						
	(0.035)						
ICET × Baseline Grade (main subjects, std.)		-0.034					
		(0.016)**					
ICET × Baseline Absence (Dec&Jan)			0.011				
			(0.010)				
ICET × Wealth (reported by teacher, 1-5)				-0.010			
				(0.033)			
ICET × Wealth rel. to others (1 = much more, 5 = much less)					0.014		
					(0.026)		
ICET × Parents are farmers						0.002	
						(0.040)	
ICET × Any parent has high educ job							0.027
							(0.056)
Female	0.055	0.053	0.052	0.050	0.050	0.050	0.050
	(0.023)**	(0.017)***	(0.017)***	(0.017)***	(0.017)***	(0.017)***	(0.017)***
Age	0.006	0.006	0.004	0.007	0.007	0.006	0.006
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Baseline Grade (main subjects, std.)	0.001	0.017	0.006	0.002	0.000	0.001	0.001
	(0.010)	(0.012)	(0.009)	(0.010)	(0.010)	(0.009)	(0.010)
Baseline Absence (Dec&Jan)			0.003				
			(0.006)				
Wealth (reported by teacher, 1-5)				0.003			
				(0.022)			
Wealth rel. to others (1 = much more, 5 = much less)					-0.012		
					(0.020)		
Parents are farmers						-0.020	
						(0.026)	
Any parent has high educ job							-0.040
							(0.032)
Observations	601	601	601	598	600	601	601

Notes: OLS estimates. The outcome variable is the fraction of reading time dedicated to occupations that require a high school degree. Each regression controls for gender, age, baseline grade in main subjects, and for school fixed effects. Robust standard errors are depicted in parentheses.*/**/*** denote significance levels at 10/5/1 percent respectively.

ONLINE APPENDIX

A Supplementary Figures and Tables

Figure A.1: Holland's Hexagonal Model



Notes: Own illustration based on common visualizations of the Holland model found online. R stands for realistic, I for investigative, A for artistic, S for social, E for enterprising, and C for conventional.

Figure A.2: Test Result and Unframed Job Page

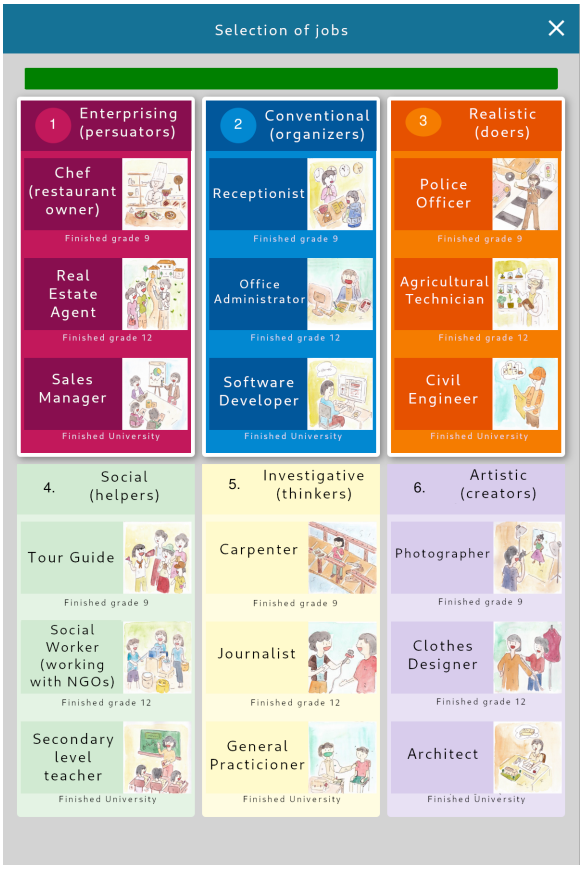
(a) Translated Example of the Test Results

(b) Example of the Job List

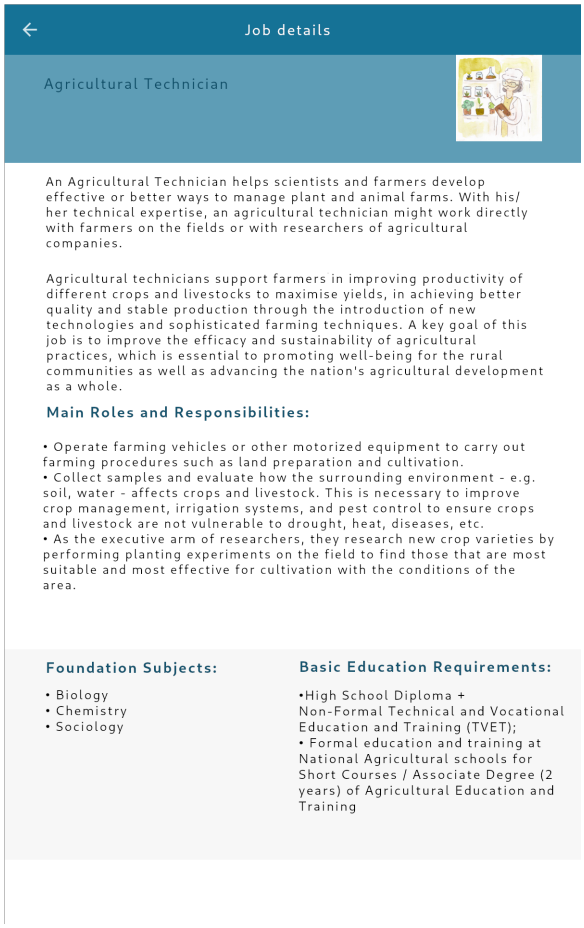
Notes: The application was programmed only in Khmer, screenshots translated ex-post for expositional purposes.

Figure A.3: Screenshots of the Career Options

(a) Overall Job page

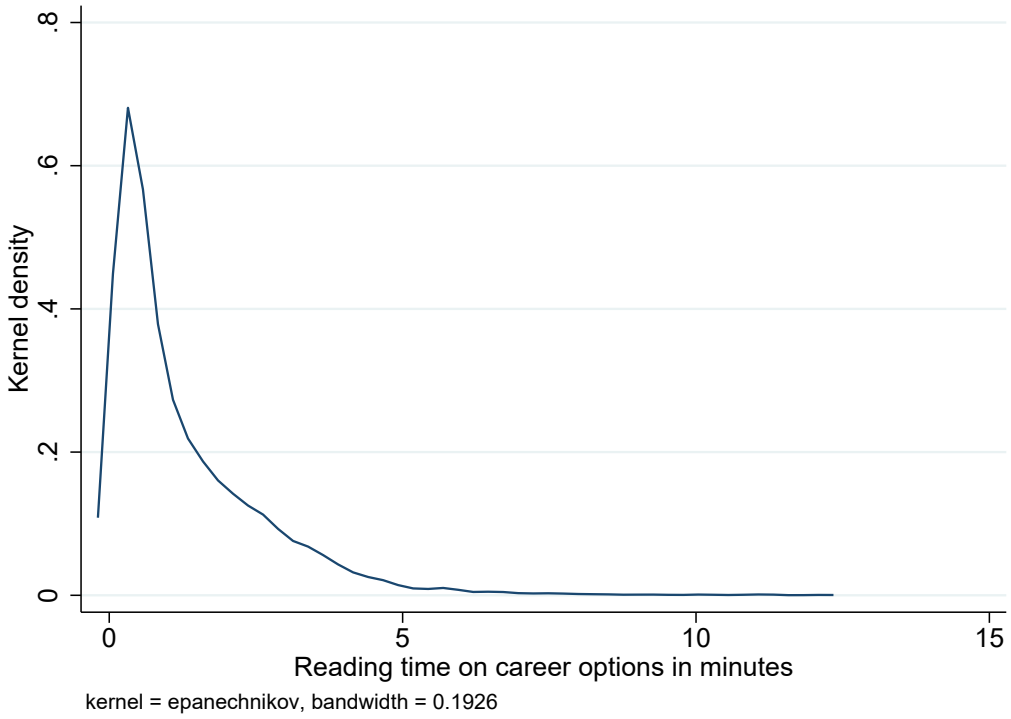


(b) Example of one Job Description



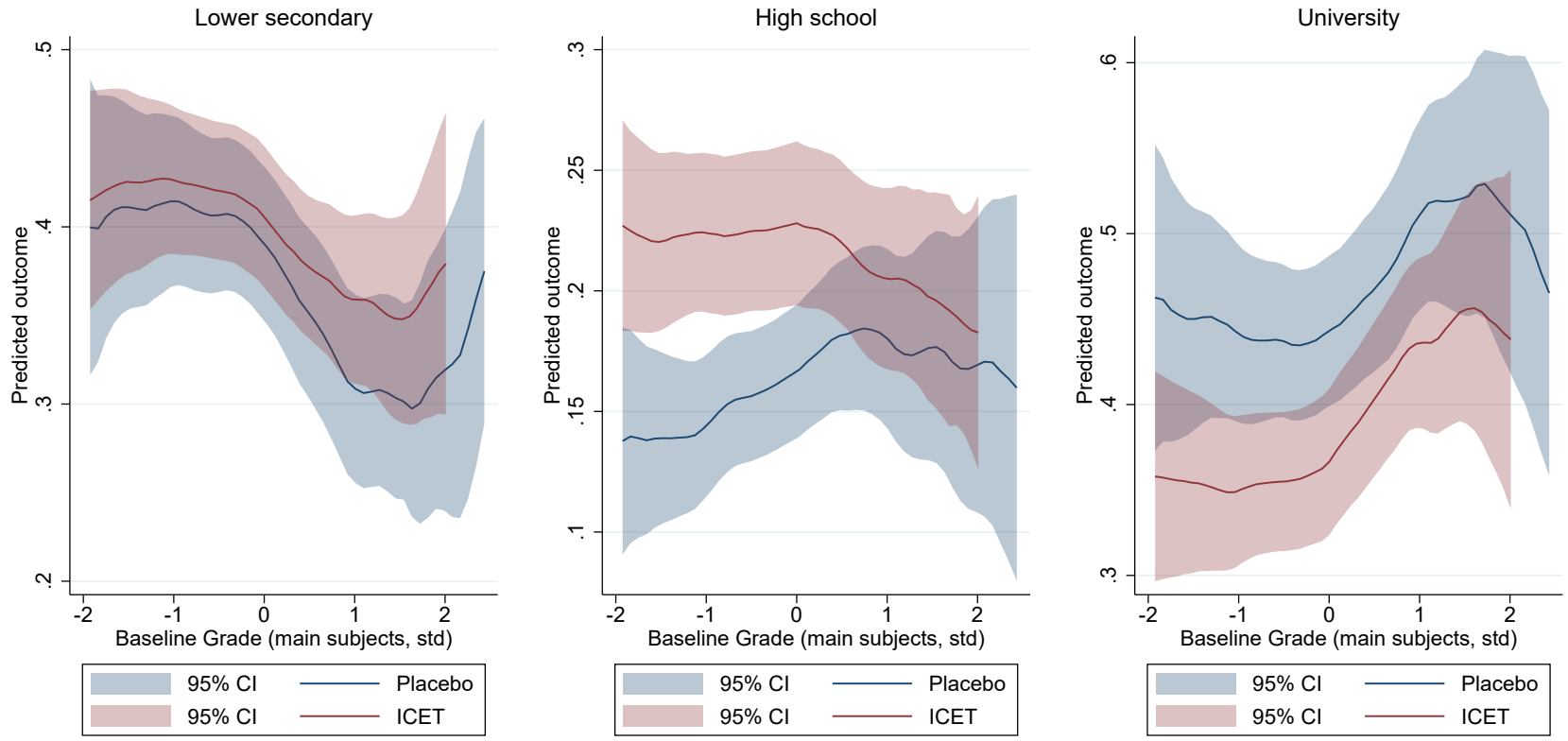
Notes: The application was programmed only in Khmer, screenshots translated ex-post for expositional purposes.
The English wording of the remaining job descriptions is available in Appendix D.

Figure A.4: Reading Time per Job Description Page



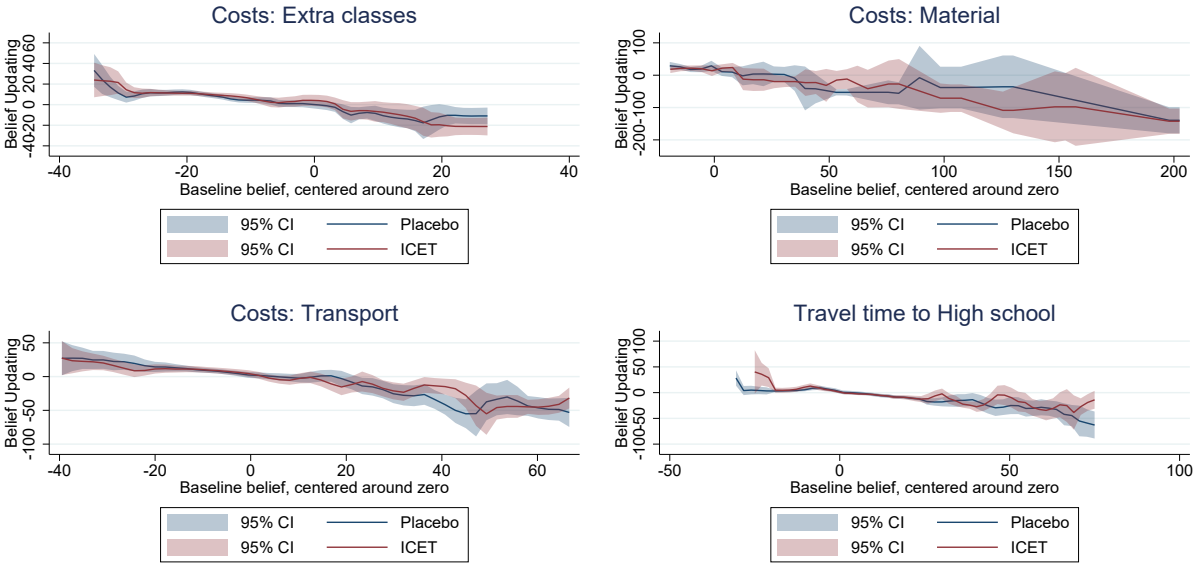
Notes: This figure shows the distribution of reading time (minutes between opening and closing a page) for all students and job descriptions in the sample.

Figure A.5: Predicted Reading Time by Occupations' Educational Requirement and Baseline Grades



Notes: Baseline grade is the total grade in the three main subjects (Khmer, Mathematics, English), averaged over the months December and January.

Figure A.6: Belief Updating about High School



Notes: The graphs show local linear regressions of belief updating on baseline beliefs, with 95% confidence intervals. Belief updating is the difference between a student's endline and baseline estimates wrt the outcome, which is (i) the cost of extra classes (i.e. informal tuition) per month, (ii) the annual expenses for school material when going to high school, (iii) the costs of transportation per month when going to high school (e.g., by motorbike), and (iv) the travel time to high school by motorbike (in minutes). Baseline beliefs are all centered around the (school-specific) true value, as reported in the information session.

Table A.1: Job Categorization in the CET

	Required educational degree		
Type	grade 9	grade 12	university
Realistic	police officer	agric. technician	civil engineer
Investigative	carpenter	journalist	general practitioner
Artistic	photographer	clothes designer	architect
Social	tour guide	social worker	sec.-level teacher
Enterprising	chef	real-estate agent	sales manager
Conventional	receptionist	office administrator	software developer

Notes: Each occupation is assigned to one of the six personality types and to one of three educational degrees. The former categorization relies on the classification by the NEA (see Appendix B), the latter is categorized by the research team (in consultation with local partners).

Table A.2: Occupational Aspirations among Grade 9 Students

Occupation	Freq.	Percent	Cum. Percent
Teacher	102	57.95	57.95
Physician	31	17.61	75.56
Police officer	19	10.80	86.36
Soldier	8	4.55	90.91
Farmer	3	1.70	92.61
Government staff	3	1.70	94.32
Other	10	5.68	100.00
Total	176	100.00	

Notes: Data collected during preliminary study in 2019. Survey question: When you are about 25 years old, what job would you like to be doing? (open ended).

Table A.3: Outline of the Intervention

Time	Session	A1: ICET	A2: Placebo	A3: Control
7:00	Registration & Introduction			
7:40	Baseline survey	Background information on student('s family); beliefs about costs of attending high school		
8:20	Break	Facilities, snacks, and beverages; supervised game		
8:35	IET	(a) three tests on personal interests and preferences	(a) three tests on gender attitudes and climate change	game outdoors
		(b) personality types	(b) —	
	CET	(a) list of 18 jobs; students indicate most interesting ones(s)	(a) list of 18 jobs; students indicate most interesting one(s)	game outdoors
		(b) list of 18 jobs (ordered by personality types), students can click on each job to read more detail	(b) list of 18 jobs (ordered randomly), students can click on each job to read more detail	
10:05	Midline survey	Perceived constraints of attending high school; quizz: interpreting graph with costs of education		
10:25	Break	Facilities, snacks, and beverages; supervised game		
10:40	School Information session	Detailed information on high schools and vocational training, including costs involved and available scholarships		
11:20	Endline survey	Questions capturing information retention; aspirations and expectations on education and career path		
11:40	Thank you & Farewell (end at 12:00)			

Notes: The timeline is suggestive and only serves as an orientation. Starting times were school-dependent and influenced by factors such as road access or mandatory start-of-the-day assembly conducted by the principal to name a few. Lengths of individual sessions also varied from school to school to ensure that every student was on track and understood the session's content.

Table A.4: Robustness checks: App Engagement at the Different Margins

	Selected Any		Read Any		Pages read 50-75th pctl		Pages read 50-95th pctl	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	-0.002	-0.003	-0.016	-0.016	0.116	0.130	0.341	0.388
	(0.021)	(0.021)	(0.015)	(0.016)	(0.139)	(0.138)	(0.165)**	(0.162)**
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	0.92		0.97		1.33		2.30	
Observations	626		626		626		626	

Notes: OLS estimates. Outcome variables are whether the student selected any occupation as potentially interesting in cols (1) and (2), whether student read any occupational description in cols. (3) and (4), and the number of pages a student spend on between 0.77 and 1.81 minutes (cols. 5-6), and between 0.77 and 3.85 minutes (cols. 7-8), respectively. Individual controls include gender, age, and baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.5: Total Reading Time in Career Exploration Tool

	Occupations are outside 85% ref window		Occupations' educational requirements: lower secondary		high school		university	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	0.754	0.796	0.039	0.007	0.505	0.528	-0.760	-0.675
	(0.299)**	(0.302)***	(0.232)	(0.233)	(0.167)***	(0.166)***	(0.238)***	(0.238)***
	[0.022]	[0.018]	[0.862]	[0.979]	[0.009]	[0.008]	[0.007]	[0.016]
	{ 0.158}	{ 0.121}	{ 0.918}	{ 0.992}	{ 0.022}	{ 0.009}	{ 0.019}	{ 0.050}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	4.78		3.25		1.53		3.85	
Observations	626		626		626		626	

Notes: OLS estimates. The outcome variable is the total reading time (in minutes) dedicated to occupations outside the 85% reference window (cols. 1-2), and to occupations that require at least lower-secondary education (cols. 3-4), high school (cols. 5-6), and a university degree (cols. 7-8). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing are in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.6: Number of Pages Actively Read in Career Exploration Tool

	Occupations are outside 85% ref window		Occupations' educational requirements: lower secondary		high school		university	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	0.406	0.428	0.091	0.087	0.270	0.278	-0.062	-0.024
	(0.129)***	(0.129)***	(0.086)	(0.087)	(0.072)***	(0.071)***	(0.091)	(0.089)
	[0.006]	[0.004]	[0.502]	[0.539]	[0.000]	[0.000]	[0.502]	[0.790]
	{ 0.024}	{ 0.015}	{ 0.481}	{ 0.520}	{ 0.002}	{ 0.002}	{ 0.568}	{ 0.807}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	1.48		0.96		0.48		1.09	
Observations	626		626		626		626	

Notes: OLS estimates. The outcome variable is the number of pages read (reading time between 46 seconds and 6.17 minutes) that are dedicated to occupations outside the 85% reference window (cols. 1-2) and to occupations that require at least lower-secondary education (cols. 3-5), high school (cols. 5-6), a university degree (cols. 7-8). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing are in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.7: Balance Table - Three Treatment Arms

Variable	(1) Mean ICET	(2) Mean Pleacebo	(3) Mean Control	(4) ICET - Plac	(5) ICET - Control	(6) Control - Placebo
Female	0.54	0.53	0.66	0.00	-0.13***	0.13***
	(0.50)	(0.50)	(0.47)	(0.95)	(0.01)	(0.01)
Age	15.37	15.37	15.33	-0.00	0.03	-0.04
	(1.05)	(1.21)	(1.10)	(0.96)	(0.75)	(0.73)
Num siblings	2.50	2.58	2.76	-0.08	-0.26	0.18
	(2.06)	(1.69)	(1.86)	(0.60)	(0.17)	(0.31)
Financial worries (0-10)	7.75	7.94	7.48	-0.19	0.26	-0.45
	(2.86)	(2.82)	(2.96)	(0.40)	(0.37)	(0.12)
Wealth rel. to others (1 = much more, 5 = much less)	3.30	3.30	3.27	-0.00	0.02	-0.03
	(0.70)	(0.59)	(0.62)	(0.96)	(0.70)	(0.65)
Any parent is farmer	0.78	0.77	0.77	0.01	0.01	-0.01
	(0.41)	(0.42)	(0.42)	(0.86)	(0.76)	(0.87)
Mother or father high educ job	0.09	0.08	0.11	0.01	-0.01	0.03
	(0.29)	(0.27)	(0.31)	(0.50)	(0.64)	(0.33)
Any fam. members migrated	0.47	0.42	0.45	0.05	0.02	0.03
	(0.50)	(0.49)	(0.50)	(0.20)	(0.65)	(0.56)
Wealth (reported by teacher, 1-5)	2.92	2.92	2.89	0.00	0.03	-0.02
	(0.53)	(0.47)	(0.49)	(0.91)	(0.60)	(0.65)
Literacy (reported by teacher, 1-5)	3.23	3.26	3.44	-0.04	-0.21**	0.18**
	(0.88)	(0.84)	(0.84)	(0.60)	(0.01)	(0.03)
High-school ability (reported by teacher, 1-5)	3.16	3.22	3.38	-0.06	-0.22***	0.16**
	(0.80)	(0.85)	(0.74)	(0.38)	(0.00)	(0.03)
Distance to school (km)	3.98	3.99	4.21	-0.01	-0.22	0.22
	(3.86)	(4.02)	(4.28)	(0.99)	(0.58)	(0.60)
Distance to district town (km)	9.96	9.74	9.74	0.22	0.22	-0.00
	(6.47)	(6.45)	(6.44)	(0.68)	(0.73)	(1.00)
Distance to high school (km)	9.33	9.27	9.17	0.06	0.17	-0.10
	(6.59)	(6.37)	(6.40)	(0.90)	(0.79)	(0.87)
Baseline Grade (main subjects, std.)	-0.31	-0.15	0.05	-0.16**	-0.36***	0.20**
	(0.90)	(0.96)	(1.02)	(0.03)	(0.00)	(0.04)
Baseline Absence (Dec&Jan)	1.63	1.59	1.28	0.05	0.36**	-0.31*
	(1.88)	(1.96)	(1.45)	(0.76)	(0.02)	(0.05)
Expected costs high school: total	291.52	274.86	289.57	16.65	1.95	14.70
	(369.41)	(331.81)	(312.18)	(0.55)	(0.95)	(0.64)
Expected costs high school: extra classes	15.39	16.41	14.20	-1.02	1.19	-2.21*
	(14.28)	(13.86)	(12.02)	(0.37)	(0.35)	(0.08)
Expected costs high school: transport	22.96	22.19	20.31	0.77	2.65	-1.88
	(22.09)	(19.94)	(21.36)	(0.65)	(0.22)	(0.37)
Expected costs high school: material	35.80	35.57	30.83	0.23	4.97	-4.74
	(54.90)	(53.75)	(49.79)	(0.96)	(0.33)	(0.35)
Observations	315	311	151	626	466	462

Notes: (1) and (2): standard deviations in parentheses; (3): derived by regressing variable of interest on treatment dummy, robust p-values reported in parentheses . */**/*** denote significance levels at 10/5/1 percent respectively. The baseline grade is the sum of Math, Khmer and English (averaged over the months December and January and standardized). The highest achievable points in Khmer, English, and Math are 100, 50 and 100, respectively. Absences are absent days per month (note that for one school this information is missing).

Table A.8: Student Perception of High School Feasibility

	Constraints to high school		Cost of grade 10	
	(1)	(2)	(3)	(4)
ICET	-0.026	-0.113	51.492	70.479
	(0.140)	(0.138)	(79.329)	(79.805)
	[0.851]	[0.612]	[0.760]	[0.612]
	{ 0.791}	{ 0.264}	{ 0.570}	{ 0.423}
School fixed effects	✓	✓	✓	✓
Individual controls		✓		✓
Placebo Mean		5.74		150.37
Observations		626		626

Notes: OLS estimates. The constraints index is the average rating over five statements on a scale from zero to ten: (i) I never want to move far from my home village, (ii) I think I would be able to graduate high school within the three years if I went to high school, (iii) For the jobs that I would like to do the necessary/required education is likely too costly for me and my family, (iv) I think my grades are not good enough to go to high school, and (v) It will be difficult to persuade my parents to allow me to go to high school. Cost estimates are obtained by showing students a bar graph that depicts average educational expenditures per grade in Cambodia from grade 6 to grade 10. Grades 6 to 9 included the actual amount in KHR displayed on top of the bar. Students were then asked to guess the absolute value (in KHR) of the educational expenditure corresponding to grade 10. Their answer is centered around true value (1405). Both outcomes are elicited in the midline survey. Individual controls include gender, age, and baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.9: Costs and Distance Beliefs about High School, Scholarship Knowledge

	Absolute Difference between Students' Endline Estimates and Truth in								Names correct	
	Distance to HS		Transportation Cost		Cost Extra Classes		Material Cost		Scholarship	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ICET	0.895	0.168	1.702	1.740	0.352	0.103	-2.655	-3.291	-0.019	-0.009
	(1.383)	(1.337)	(1.323)	(1.331)	(0.840)	(0.824)	(3.857)	(3.896)	(0.037)	(0.037)
	[0.931]	[0.993]	[0.665]	[0.654]	[0.931]	[0.993]	[0.931]	[0.866]	[0.931]	[0.993]
	{ 0.675}	{ 0.908}	{ 0.297}	{ 0.326}	{ 0.702}	{ 0.910}	{ 0.482}	{ 0.399}	{ 0.631}	{ 0.789}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓		✓
Placebo Mean	11.81		13.69		12.88		26.25		0.45	
Observations	623		623		623		623		623	

Notes: OLS estimates. Outcome variables are students' expectations over (i) the travel time to high school by motorbike (in minutes), (ii) the costs of transportation per month when going to high school (e.g., by motorbike), (iii) the cost of extra classes (i.e. informal tuition) per month, (iv) the annual expenses for school material when going to high school, and (v) the accuracy of students' responses when asked about the non-governmental organizations that provide scholarships for the nearest high school. The time and cost variables are centered around the (school-specific) true value (in absolute terms), i.e. a negative coefficient indicates that estimate is closer to the truth. Cost estimates converted to US-$. All estimates are winsorized at 95th percentile. Sample size is adjusted for three students who left during the information session (one student from the ICET arm, two from the placebo arm). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing are in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.10: Belief Updating about High School

	Absolute Difference at Endline (Estimate - Truth) minus Abs. Diff at Baseline in							
	Distance to HS		Transportation Cost		Cost Extra Classes		Cost Material	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	2.310	1.900	0.254	0.123	-0.468	-0.451	-1.924	-2.854
	(1.390)*	(1.387)	(1.638)	(1.630)	(0.882)	(0.887)	(4.816)	(4.879)
	[0.334]	[0.522]	[0.933]	[0.940]	[0.933]	[0.910]	[0.933]	[0.910]
	{ 0.017}	{ 0.040}	{ 0.908}	{ 0.958}	{ 0.493}	{ 0.526}	{ 0.682}	{ 0.553}
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Placebo Mean	-7.63		-1.79		-3.28		-2.87	
Observations	623		623		623		623	

Notes: OLS estimates. Outcome variables is the amount of belief updating, i.e. $|Y_{ijt} - \hat{Y}_j| - |Y_{ijt-1} - \hat{Y}_j|$. Cost estimates converted to US-$. All estimates are winsorized at 95th percentile. Individual controls include gender, age, and baseline grade in main subjects. Robust standard errors are depicted in parentheses. Romano-Wolf p-values adjusted for multiple hypothesis testing in brackets, and wild-cluster bootstrap p-values adjusted for correlation in outcomes within schools are in curly brackets. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.11: Educational Aspirations as Reported at Endline

Aspires to achieve	lower secondary		high school		university	
	(1)	(2)	(3)	(4)	(5)	(6)
ICET	0.029	0.027	0.008	-0.012	-0.063	-0.035
	(0.025)	(0.025)	(0.035)	(0.035)	(0.039)	(0.038)
School fixed effects	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓
Placebo Mean	0.09		0.26		0.63	
Observations	623		623		623	

Notes: OLS estimates. The outcome variable is a dummy equal to one if the student reports to aspire to achieve lower secondary education (cols 1-2), a high school degree (cols. 3-4), or a university degree (cols. 5-6). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

Table A.12: Occupational Aspirations as Reported at Endline

	Occupation is outside 85% reference window					
	First occupation		Second occupation		Third occupation	
	(1)	(2)	(3)	(4)	(5)	(6)
ICET	0.041	0.029	-0.037	-0.042	-0.032	-0.030
	(0.038)	(0.038)	(0.042)	(0.043)	(0.049)	(0.049)
School fixed effects	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓
Placebo Mean	0.34		0.48		0.55	
Observations	622		546		409	

Notes: OLS estimates. The outcome variable is a dummy equal to one if the student reports to aspire to an occupation that is outside the 85% reference window, by order of reporting (up to three occupations possible, question is open ended). Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

B Composition of ICET

The Interest and Career Exploration Tool (ICET) was developed together with a Cambodian consultant and implemented by a Cambodian programmer. It heavily borrows from Holland's hexagonal model of personality types (Holland, 1959, 1997). The model, visualized in Figure A.1, consists of six personality types: realistic (R) or "doer", investigative (I) or "thinker", artistic (A) or "creator", social (S) or "helper", enterprising (E) or "persuader", and finally conventional (C) or "organizer". Other personality models and personality tests that build on Holland (1959) propose additional personality types. For example, Athanasou (2007) uses ten types. We decided to use the original classification proposed by Holland because any set larger than six types is usually a combination of Holland's six.

A typical personality test based on Holland (1959, 1997) requires the test takers to indicate how much they agree or disagree with several statements related to their own interests, for example, whether they enjoy performing certain activities. These answers are used to identify the test takers' three most dominant types (or "Holland's code"). A fundamental assumption in the theory of occupation interest Holland (1959, 1997) is that that occupations can also be classified based on these six personality types, and that individuals working in occupations that match their personality display higher job satisfaction that individuals who do not.

The National Employment Agency (NEA) of Cambodia has already used the Holland's model for high school students' career counseling, producing a paper-based booklet with limited outreach. We refrained from using the NEA's personality tests and instead opted for a version better tailored to our context and age-group. We created three tests to determine the students' dominant personality types, consisting of statements which are activity-based (e.g. "I like hiking") and related to students' life in rural areas. Nonetheless, when linking the test results to potential occupations, we took advantage of the fact that the NEA already provided an extensive list on many occupations and their associated personality type(s). For the occupations the NEA did not classify, we used international classifications of occupations with respect to their personality types.

We chose three jobs per type, depending on the required educational level from low to high: completing grade 9, completing high school, or completing a university degree. The 18 jobs we selected are shown in Table A.1. Inclusion criteria were that the occupations actually exist in these provinces (cross-checked with the Cambodia Socio-Economic survey). Moreover, we included the most common jobs students chose in our pre-study conducted in July 2019: police officer is the job with the lowest educational requirement for the realistic type, secondary-level teacher is the job with the highest educational requirement for the

social type, and general practitioner is the job with the highest educational requirement for the investigative type.

We ran two pre-tests and two pilots to make sure students understood the statements, as well as agreed with the link between their answers and the test results. To enhance the students' comprehension, we added gender-neutral pictures painted by a Cambodian artist to the test statements where possible. Moreover, at the time of the intervention, students were supported by research assistants in the completion of the application. They were also instructed to click on a robot icon that appeared on all relevant pages whenever they had doubts on how to proceed. Clicking on the icon displayed detailed instructions on what students had to do in each part of the application.

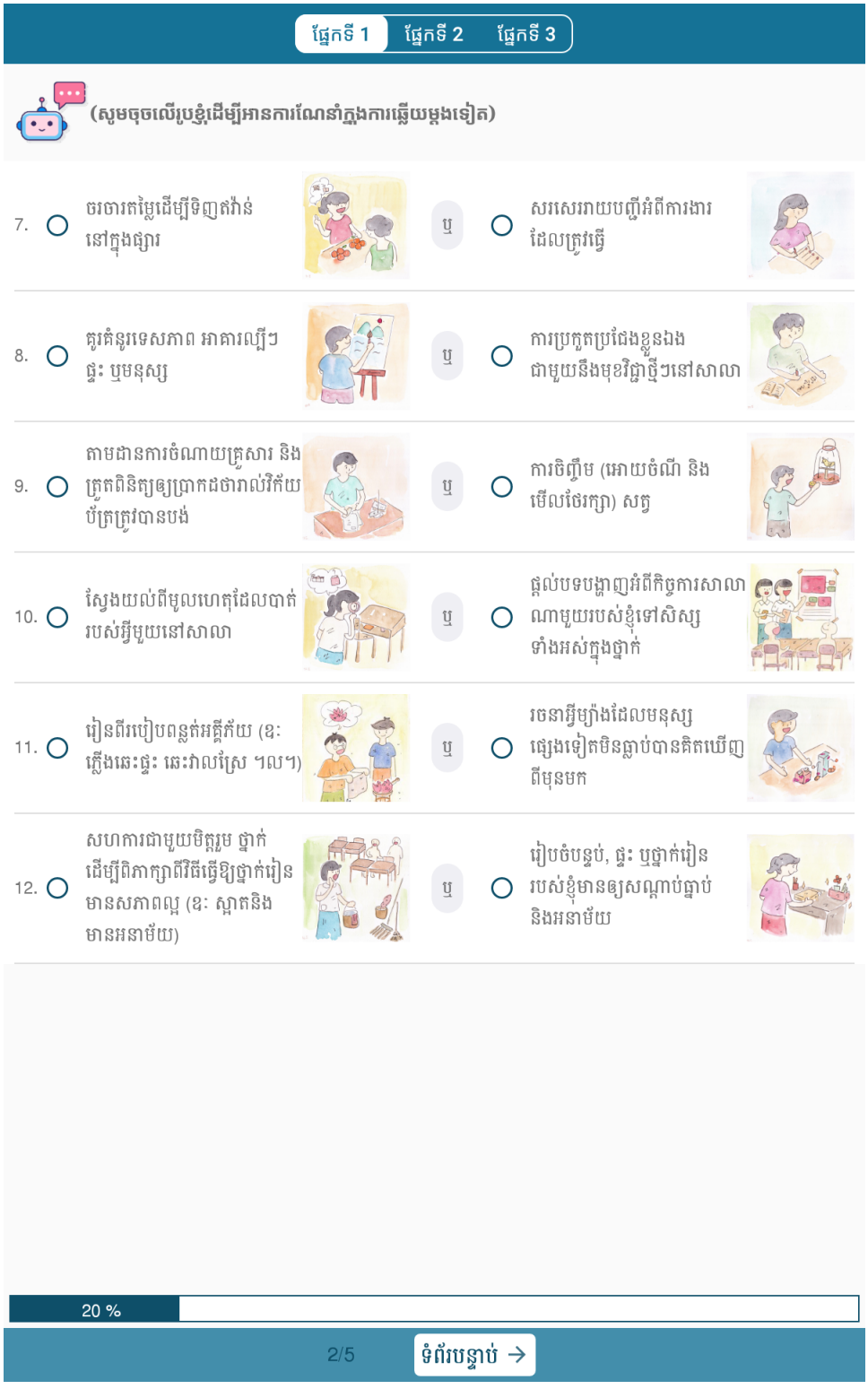
The structure of the ICET is summarized in the second column of Table A.3. The ICET starts with the Interest Exploration Tool (IET) and has two parts: a) the three personality tests we developed and b) personalized test results for each student. The IET is followed by the Career Exploration Tool (CET), in which students are shown the 18 occupations from Table A.1 twice in two different designs: a) a pure list in random order from which students can choose up to three and b) an ordered and personalized overview with detailed information about each occupation once students click on it.

The application starts with a login screen and a short introduction. Then, students access the first page of the first test, as shown in Figure B.1. As the application was only programmed in Khmer, all the screenshots we provide are in Khmer.

The first test is based on the work of Athanasou (2000, 2007) and consists of five pages with the same layout, displaying a total of 30 items. Each item consists of two opposing statements, each corresponding, in turn, to a specific personality type. Throughout the test, every personality type is contrasted with all other types twice. For example, when contrasting the artistic type with the social type, the statements were "Designing an original or new equipment that my school needs such as new colorful rubbish bins or desks" versus "Tutoring students who have problems in their studies". Students are required choose one statement over the other for each item and cannot change their selection once they proceed to the next page. Consistently choosing one particular personality type over the others results in a maximum score of ten points for that type.

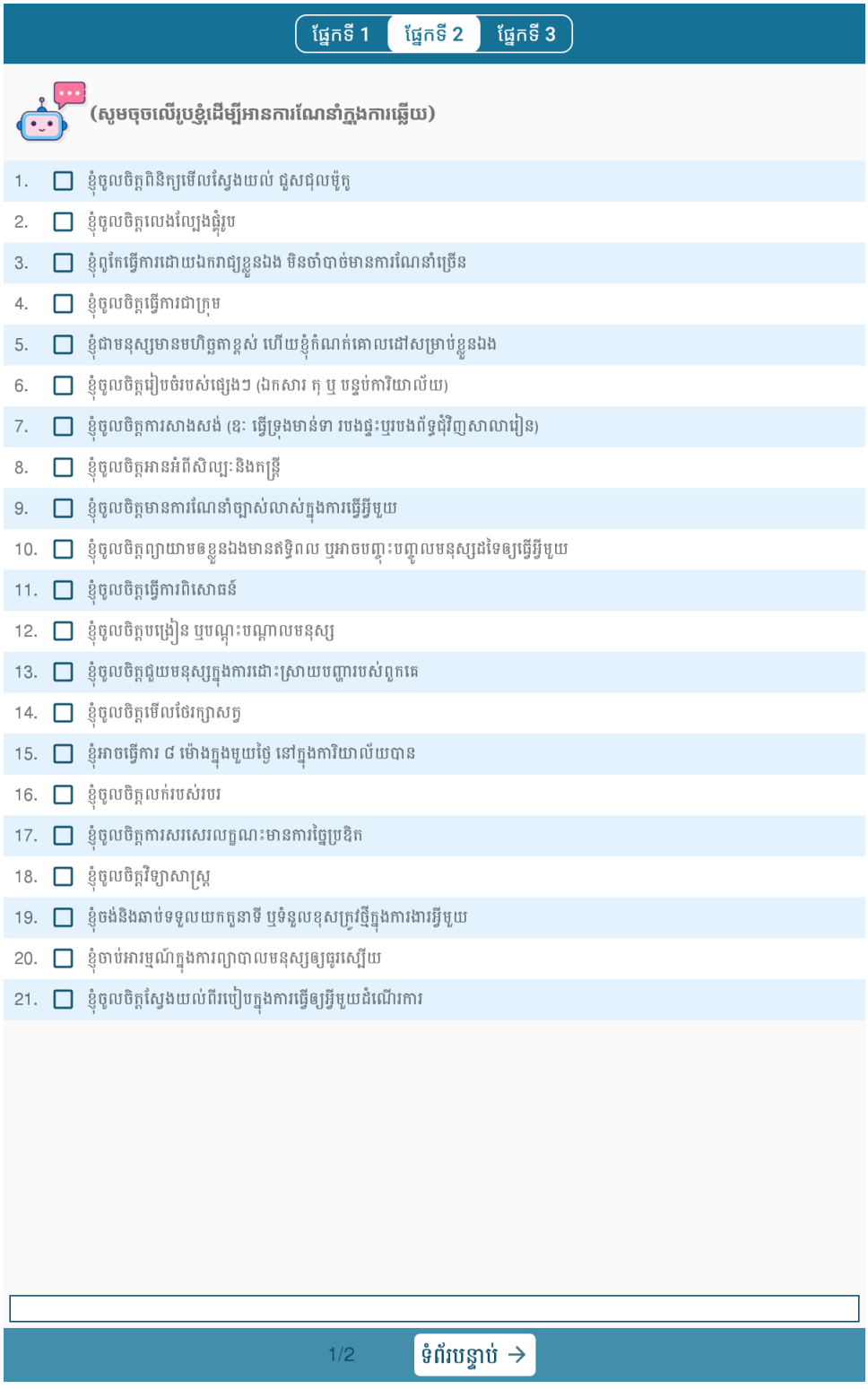
The second test consists of 42 activity-based statements related to one of the six types, displayed across two pages with the same layout (see Figure B.2 for an example). Students check the box to select a statement and are allowed to deselect their choice if needed. A type receives points whenever students check its related box, with a maximum of seven points. The template for this test is the result of a collaboration between the Hawaii Department of Education and the Occupation Information Network (O*NET) (Hawaii Department of

Figure B.1: Screenshot of Test 1



Notes: The application was programmed only in Khmer. The English wording is available in Appendix D.

Figure B.2: Screenshot of Test 2



Notes: The application was programmed only in Khmer. The English wording is available in Appendix D.

Education, 2020) and it has been in use worldwide for at least a decade, although most users are located in Hawaii or in the United States. We include this test because it has been internationally validated (although not for Cambodia).

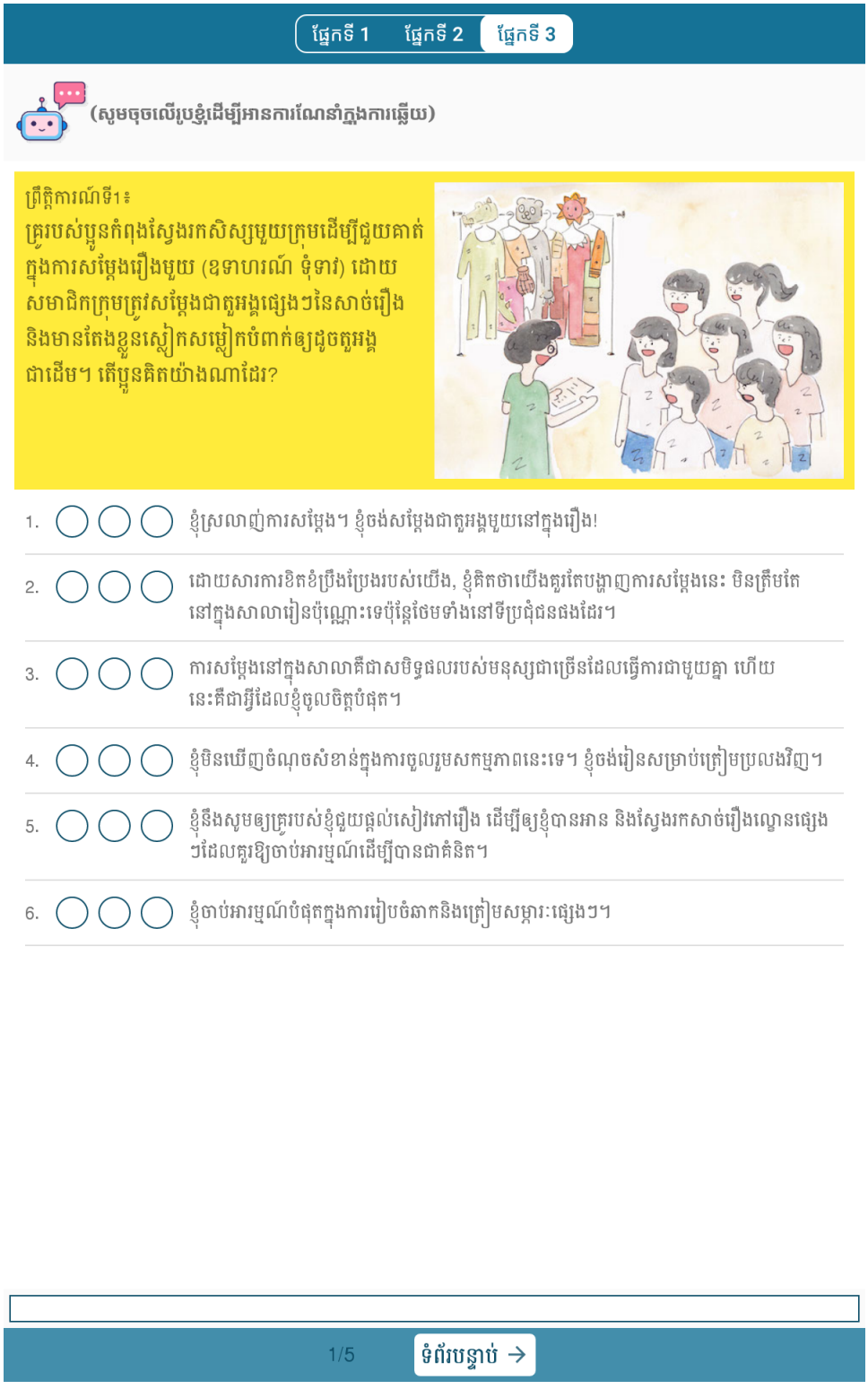
To the best of our knowledge, the format of the third test has not been implemented prior to this study. We designed it after discussing what would be appropriate for ninth-graders with local experts. It consists of five different scenarios, on five separate pages with the same layout. Each scenario starts with a half-sentence describing a particular situation (see Figure B.3 for an example). Students are then shown six different options of how the sentence could be completed. Each option is related to a specific personality type and can be assigned up to three points by the students. Students can (1) choose three different options, thus giving one option one point each, or 2) choose two options such that one receives two points and the other only one point, or 3) choose a single option by allocating three points to it. Based on five different scenarios, the maximum number of points awarded for the same personality type is 15. Students are not allowed to change their choices once they proceed to the next page.

The students' choices in all tests are used to compute the final score for each personality type. In aggregating the results from the three tests, our goal was to maximize variation across types and to minimize differences in results between tests. Based on data from two pilots, we checked for the correlations of predicted personality types per student across tests and found the second and third tests to generate the most consistent results. The first test, by contrast, did not yield results consistent with the other two tests. Therefore, and to reflect the differences in test length, we set the scoring algorithm as follows: the third test is given the highest weight, entering the formula with half of its score. The second test is divided by a factor of 2.5, and the first test by a factor of 20.

After completing the three tests, the students are forwarded to a result page, which displays all six personality types. Students see their three strongest personality types in bright colors from left to right in the first row, while the three weakest types are displayed in muted colors in the second row (see Figure A.2a). Furthermore, students are presented with bars showing their final score for each personality type. The highest score is normalized to 100, and the scores for the other types are given as percentages of the highest score. For each type, the corresponding keyword (e.g., "realistic") and a brief description inspired by the Delaware Departement of Labor (2019) (but adapted to the rural Cambodian context) are displayed on the results page. Students can click on any of the six personality types to read more detailed descriptions. This screen concludes the IET section of the app.

The next section of the app (named CET) focuses on occupations. First, students are shown the 18 jobs from Table A.1 in random order, together with pictures (Figure A.2b).

Figure B.3: Screenshot of Test 3



Notes: The application was programmed only in Khmer. The English wording is available in Appendix D.

Student can choose to click on any given occupation. We refer to this element as "unframed selection", as no information on personality types or educational level is disclosed. Students are instructed to choose up to three jobs which seem attractive to them, with an opt-out option in case they do not find any job to be interesting.

The application concludes with an overview of the same jobs, this time ordered by the students' strongest personality types (see Figure A.3a). The first row shows the students' best occupational matches based on their Holland Code, arranged from left to right starting with the job that requires the least education and ending with the job that requires the most education. All 18 jobs are displayed on the same page, and students can click on any occupation to open a pop-up window with a detailed description. Each description outlines the job's activities, key tasks and responsibilities, societal value, and educational requirements (see A.3b for an example, in this case agricultural technician). Students are free to read any job description, including those that do not relate to their strongest personality types, within a 17-minutes limit. A timer, shown as a green bar that turns yellow and red towards the end, tracks the time. They can also log out anytime before the timer runs out.

C Pre-specified Anlysis with Control Arm

Table C.1: Student Perception of High School Feasibility

	Constraints to high school		Cost of grade 10	
	(1)	(2)	(3)	(4)
ICET	0.237	0.106	-34.010	-9.516
	(0.178)	(0.172)	(107.517)	(108.804)
Placebo	0.265	0.228	-87.020	-83.879
	(0.179)	(0.169)	(105.514)	(104.714)
School fixed effects	✓	✓	✓	✓
Individual controls		✓		✓
Control Mean	5.47		243.62	
Observations	776		776	

Notes: OLS estimates. The constraints index is the average rating over five statements on a scale from zero to ten: (i) I never want to move far from my home village, (ii) I think I would be able to graduate high school within the three years if I went to high school, (iii) For the jobs that I would like to do the necessary/required education is likely too costly for me and my family, (iv) I think my grades are not good enough to go to high school, and (v) It will be difficult to persuade my parents to allow me to go to high school. Cost estimates are obtained by showing students a bar graph that depicts average educational expenditures per grade in Cambodia from grade 6 to grade 10. Grades 6 to 9 included the actual amount in KHR displayed on top of the bar. Students were then asked to guess the absolute value (in KHR) of the educational expenditure corresponding to grade 10. Their answer is centered around true value (1405). Both outcomes are elicited in the midline survey, and the reference group is the control arm. Individual controls include gender, age, and baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

Table C.2: Costs and Distance Beliefs about High School, Scholarship Knowledge

	Absolute Difference between Students' Endline Estimates and Truth in								Names correct	
	Distance to HS		Transportation Cost		Cost Extra Classes		Material Cost		Scholarship	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ICET	0.578	-0.736	1.148	1.256	1.107	0.211	4.416	3.616	0.006	0.020
	(1.752)	(1.720)	(1.646)	(1.669)	(1.029)	(1.000)	(4.506)	(4.598)	(0.045)	(0.045)
Placebo	-0.301	-0.804	-0.518	-0.336	0.745	0.154	7.054	6.915	0.027	0.031
	(1.701)	(1.664)	(1.619)	(1.625)	(1.038)	(1.012)	(4.646)	(4.557)	(0.045)	(0.045)
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓		✓
Control Mean	12.32		14.37		12.00		19.87		0.44	
Observations	772		772		772		772		772	

Notes: OLS estimates. Outcome variables are students' expectations over (i) the travel time to high school by motorbike (in minutes), (ii) the costs of transportation per month when going to high school (e.g., by motorbike), (iii) the cost of extra classes (i.e. informal tuition) per month, (iv) the annual expenses for school material when going to high school, and (v) the accuracy of students' responses when asked about the non-governmental organizations that provide scholarships for the nearest high school. The time and cost variables are centered around the (school-specific) true value (in absolute terms), i.e. a negative coefficient indicates that estimate is closer to the truth. Cost estimates converted to US-$. All estimates are winsorized at 95th percentile. Sample size is adjusted for five students who left during the information session (one student from the ICET arm, two from the placebo arm, two from control arm), and the reference group is the control arm. Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

Table C.3: Belief Updating Regarding High-School Costs and Distance

	Updating in Absolute Difference between Students' Estimates and Truth in							
	Distance to HS		Transportation Cost		Cost Extra Classes		Material Cost	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ICET	-0.202	-0.937	0.417	0.195	0.089	-0.176	-0.874	-1.621
	(1.508)	(1.510)	(1.969)	(2.025)	(1.058)	(1.070)	(5.915)	(6.058)
Placebo	-2.512	-2.832	0.206	0.145	0.561	0.285	1.024	0.969
	(1.516)*	(1.515)*	(1.910)	(1.950)	(1.049)	(1.055)	(5.881)	(5.811)
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls		✓		✓		✓		✓
Control Mean	-5.06		-2.23		-3.86		-3.92	
Observations	772		772		772		772	

Notes: OLS estimates. Outcome variables are students' expectations over (i) the travel time to high school by motorbike (in minutes), (ii) the costs of transportation per month when going to high school (e.g., by motorbike), (iii) the cost of extra classes (i.e. informal tuition) per month, (iv) the annual expenses for school material when going to high school, and (v) the accuracy of students' responses when asked about the non-governmental organizations that provide scholarships for the nearest high school. The time and cost variables are centered around the (school-specific) true value (in absolute terms), i.e. a negative coefficient indicates that estimate is closer to the truth. Cost estimates converted to US-$. All estimates are winsorized at 95th percentile. Sample size is adjusted for five students who left during the information session (one student from the ICET arm, two from the placebo arm, two from control arm), and the reference group is the control arm. Individual controls include gender, age, baseline grade in main subjects. Robust standard errors are depicted in parentheses. */**/*** denote significance levels at 10/5/1 percent respectively.

D Wording of ICET

Interest-based personality tests

Table D.1: Wording of Test 1, personality type in parentheses

ID	Statement 1	Statement 2
t1_q1	Designing an original or new equipment that my school needs such as new colorful rubbish bins or desks (A)	Tutoring students who have problems in their studies (S)
t1_q2	Selling goods or groceries to customers (E)	Keeping records of income such as gift money from guests or expenses in events (e.g. a wedding, a religious ceremony such as "Bon Kathen") (C)
t1_q3	Helping out a friend who is busy with lots of work to do for their family (e.g. by doing house chores, or helping with the family business) (S)	Going to the library and reading about a topic I am interested in (I)
t1_q4	Encouraging people with a positive attitude before an exam (E)	Sharing something that happened to me with others to help them learn what I learned (S)
t1_q5	Studying nature or people (I)	Growing different types of trees, plants or vegetables (R)
t1_q6	Gardening such as cutting grass or trimming bushes around my house or along the street (R)	Designing a poster that is creative and eye-catching for my school (A)
t1_q7	Negotiating prices at a local market (E)	Writing to-do lists (C)
t1_q8	Painting sceneries, buildings, houses or people (A)	Challenging myself with new subjects at school (I)
t1_q9	Keeping track of household expenditures and make sure bills are being paid (C)	Raising (feeding and looking after) animals (R)
t1_q10	Finding out why something went missing at school (I)	Giving presentation about my school assignment to the class (E)
t1_q11	Learning how to put out fires (e.g. houses/buildings or fields on fire) (R)	Designing something that other people have not thought of before (A)
t1_q12	Teaming up with classmates to discuss how to keep the classroom in a good shape (clean and tidy) (S)	Keeping my room, house or classroom clean and tidy on my own (C)
t1_q13	Entertaining my friends by telling an interesting story (E)	Understanding how the sanitation system works at school (R)
t1_q14	Solving exercises with clear instructions and ordered steps (C)	Writing an open-topic essay which I can write about anything I'm interested in (A)
t1_q15	Observing other people's behavior to understand their emotions and how they think (I)	Convincing friends to join a social event (E)

t1_q16	Figuring out how things work/operate (e.g. bikes) by taking them apart and putting them back together (R)	Caring for people who are disabled (S)
t1_q17	Determining the best routes to travel on to get to a specific destination (R)	Collecting information into a notebook for future reference (C)
t1_q18	Weaving baskets/bamboo balls or using grass or flowers to make bracelets (A)	Explaining how a compass (instrument to draw circles) is used to convince my friends to use it, too (E)
t1_q19	Investigating the reasons for a shortage in water supply (I)	Following routines to avoid errors or mistakes (C)
t1_q20	Checking my previous lessons or textbooks to learn from past errors (C)	Learning about new topics by reading about them in school books provided by the teachers (I)
t1_q21	Setting up a school garden such as adding the soil and grass, planting flowers, etc. (R)	Connecting with my community by learning about their problems (S)
t1_q22	Writing a song or a poem for someone I like (A)	Promote tourist attraction sites to visitors (E)
t1_q23	Understanding what happens during a lunar eclipse (e.g. by asking my teachers or older people about it) (I)	Telling interesting stories to the elderly (S)
t1_q24	Being in charge of looking after a relative's (grocery) store and serving customers in her absence (E)	Going for a hike in the mountains/forests to collect firewood, pick fruits or find natural herbal medicine (R)
t1_q25	Creating artistic advertisements for products sold in a store or sold by your parents (A)	Recording other student test scores for the teacher after an exam or for Student Report Book (C)
t1_q26	Making new friends during a social event in the neighboring village (S)	Memorizing and performing a dance you saw on TV or during a social event (A)
t1_q27	Organizing traveling arrangements such as food, accommodation, and places to visit (C)	Listening to people sharing stories (S)
t1_q28	Learning to play a musical instrument (e.g. a guitar, flute, drum) (A)	Analyzing the reasons why a mobile phone, TV or radio is not working (I)
t1_q29	Teaching children how to play sports (S)	Taking up a leadership role in a group project (E)
t1_q30	Collecting and analyzing natural resources such as fossils or minerals (I)	Learning how to fix everyday items such as broken shoes, bags, fans, etc. (R)

Table D.2: Wording of Test 2

ID	Wording	Type
t2_q1	I like studying and tinkering with motorbikes	R
t2_q2	I like to do puzzles	I
t2_q3	I am good at working independently	A
t2_q4	I like to work in teams	S
t2_q5	I am an ambitious person, I set goals for myself	E
t2_q6	I like to organize things, (files, desks/offices)	C
t2_q7	I like to build things (e.g. making chicken/duck coop, fences around the house or around the school)	R
t2_q8	I like to read about art and music	A
t2_q9	I like to have clear instructions to follow	C
t2_q10	I like to try to influence or persuade people	E
t2_q11	I like to do experiments	I
t2_q12	I like to teach or train people	S
t2_q13	I like trying to help people solve their problems	S
t2_q14	I like to take care of animals	R
t2_q15	I wouldn't mind working 8 hours per day in an office	C
t2_q16	I like selling things	E
t2_q17	I enjoy creative writing	A
t2_q18	I enjoy science	I
t2_q19	I am quick to take on new responsibilities	E
t2_q20	I am interested in healing people	S
t2_q21	I enjoy trying to figure out how things work	I
t2_q22	I like putting things together or assembling things	R
t2_q23	I am a creative person	A
t2_q24	I pay attention to details	C
t2_q25	I like filing / organizing previous lessons or teachers' handouts according to school subjects	C
t2_q26	I like to analyze things (problems/situations)	I
t2_q27	I like to play musical instruments or sing	A
t2_q28	I enjoy learning about other cultures	S
t2_q29	I would like to start my own business	E
t2_q30	I like to cook	R
t2_q31	I like acting in plays	A
t2_q32	I am a practical person	R
t2_q33	I like calculating numbers or drawing graphs to better understand a problem description in a lesson	I
t2_q34	I like to get into discussions about issues	S
t2_q35	I am good at keeping records of my work	C
t2_q36	I like to lead	E
t2_q37	I like to be and work outside in nature, fieldwork in different villages or work on different project sites	R
t2_q38	I would like to work in an office	C
t2_q39	I'm good at math	I
t2_q40	I like helping people	S
t2_q41	I like to draw	A
t2_q42	I like to talk in front of the villagers to explain solutions to problems we have in the village	E

Table D.3: Wording of Test 3

ID	Wording	Type
	Scenario I: Your teacher is looking for students to help her with an acting performance of a story (e.g. Tum Teav) with a group of people playing different characters of the story, wearing costumes, etc. What do you think?	
t3_q1_1	I love plays. I would like to play a character in the story!	A
t3_q1_2	Given how much effort we put in, I think we should show the play not only in school but in the district town.	E
t3_q1_3	The school play is a product of many people working together, this is what I like most about it.	S
t3_q1_4	I do not see the point in doing the play; I would rather prepare for my exams.	C
t3_q1_5	I'll ask my teachers to provide story books, so that I could read and search for interesting plays.	I
t3_q1_6	I am most interested in setting up the stage and putting pieces together.	R
	Scenario II: When I have a problem at school and feel worried, I would most likely do the following:	
t3_q2_1	I can reduce stress by listening to music, singing, dancing, painting or drawing.	A
t3_q2_2	I would distract myself by helping my parents with the household, in the garden, or on the farm.	R
t3_q2_3	I usually find ways to overcome my problems, they help me grow.	I
t3_q2_4	I would talk to my friends or family. Talking to people always helps me.	S
t3_q2_5	I would not let myself down too much, usually things work out.	E
t3_q2_6	I would seek help and guidance from my teacher.	C
	Scenario III: I prefer when new lessons in class are ...	
t3_q3_1	... well ordered and organized with clear information. I like to know which exercises I have to complete in a day in order to prepare for the lesson.	C
t3_q3_2	... unexpected. I need surprises to be happy and excited at school.	A
t3_q3_3	... conveyed through discussions and interactions with my friends and teachers.	S
t3_q3_4	... practical. I enjoy learning things that I can apply in my daily life.	R
t3_q3_5	... challenging. I like to find answers to complex questions.	I
t3_q3_6	... giving me the option to compete with others in group exercises.	E
	Scenario IV: Your family is planning a big wedding. What would be your role in the preparation?	
t3_q4_1	I would set up the tent and tables, or help in the kitchen.	R
t3_q4_2	I would look up the best venue, caterer, or wedding dresser/make-up artist.	I
t3_q4_3	I would enjoy preparing the decoration or being the photographer of the day.	A
t3_q4_4	I would welcome everybody on arrival and make sure that the guests are comfortable.	S
t3_q4_5	I would contact my relatives and friends and convince them to come to the wedding.	E
t3_q4_6	I would be keeping record of who is coming, in order to plan the menu and seating.	C
	Scenario V: Suppose a NGO comes to your school and wants to organize a workshop day. The NGO asks you about topics you are interested in. What workshop would you suggest?	
t3_q5_1	I would like to learn how world maps/map of Cambodia are constructed.	I
t3_q5_2	I would like to learn about how to keep track of my expenditures and how to organize my homework.	C
t3_q5_3	I would like to learn games and activities that I could do with children from my village.	S
t3_q5_4	I would like to have a creative workshop that involves acting, singing, drawing, or writing.	A
t3_q5_5	I would like to learn more about how to motivate and guide my peers.	E
t3_q5_6	I would like to learn about using and repairing cellphones.	R

D.1 Wording of job descriptions

Police officer

A Police Officer (Policeman/Policewoman) is employed and trained under the government through Cambodian National Police, Department of Ministry of Interior. He/she has the duty to serve the general public and protect it against crimes, violence or any act of injustice. Another primary function is maintaining public order and peace through law enforcement and surveillance of the public to make sure they do not break the law.

Police Officers are trained to defend themselves and the victims, and are trained investigation techniques to prevent and detect crimes such as fraud, rape, murder, or drug trafficking. They have the legal authority to arrest or detain people for a limited time when those people have been suspected of committing a crime or if there is any assault. They are also skilled at de-escalation of stressful situations between different parties.
Main Roles and Responsibilities:

- Manage traffic flow to keep the roads free of congestion, enforce the Rules of the Road for every transport user, and prevent or protocol accidents in order to maintain traffic safety and efficiency on the roads.
- In maintaining public order, police officers may patrol on foot, in a car/motorbike or are often stationed next to the road to deal with traffic violations such as giving people warnings or issuing fines.
- Receive calls to investigate burglaries or other crimes.
- Help collect evidence to solve crimes such as by investigating or interrogating suspects/criminals and witnesses to make sure the evidence is accurate and reliable before making any arrest or release.

Foundation Subjects:

- Khmer Literature
- Sociology
- Law
- History
- Physical Education

Basic Education Requirement: Lower Secondary Education + Training at The Police Academy of Cambodia

Agricultural technician

An Agricultural Technician helps scientists and farmers develop effective or better ways to manage plant and animal farms. With his/her technical expertise, an agricultural technician might work directly with farmers on the fields or with researchers of agricultural companies.

Agricultural technicians support farmers in improving productivity of different crops and livestock to maximize yields, in achieving better quality and stable production through the introduction of new technologies and sophisticated farming techniques. A key goal of this job is to improve the efficacy and sustainability of agricultural practices, which is essential to promoting well-being for the rural communities as well as advancing the nation's agricultural development as a whole.
Main Roles and Responsibilities:

- Operate farming vehicles or other motorized equipment to carry out farming procedures such as land preparation and cultivation.
- Collect samples and evaluate how the surrounding environment - e.g. soil, water - affects crops and livestock. This is necessary to improve crop management, irrigation systems, and pest control to ensure crops and livestock are not vulnerable to drought, heat, diseases, etc.
- As the executive arm of researchers, they research new crop varieties by performing planting experiments on the field to find those that are most suitable and most effective for cultivation with the conditions of the area.

Foundation Subjects:

- Biology
- Chemistry
- Sociology

Basic Education Requirements: High School Diploma + Non-Formal Technical and Vocational Education and Training (TVET);
Formal education and training at National Agricultural schools for Short Courses / Associate Degree (2 years) of Agricultural Education and Training

Civil engineer

A Civil Engineer is a person who designs, improves, and maintains construction projects such as roads, bridges, dams, water supply or sewage systems and works on structural components of buildings e.g. airports and hospitals. With the application of their scientific and environmental knowledge, he/she also oversees the operations and progress of the projects, making sure infrastructure meets basic human needs such as withstanding all weather conditions, to promote safety and improve quality of living of citizens benefiting from these constructions.

Civil Engineering is a versatile job because different projects can translate into working in different provinces/countries and during different working hours. Also, one can see the results at the end of their work - a completed bridge, a hydroelectric dam for the community to use, etc.

Main Roles and Responsibilities:

- Designing the structure of a project and planning the construction activities
- Before the implementation can begin, civil engineers have to organize and carry out logistical tasks to ensure the project site can be reached by heavy machinery and has access to water, electricity etc.
- Perform building inspections after the project has been completed
- Ensure each construction project complies with legal requirements, especially health and safety. This is by maintaining the quality of air, water, and land through sustainable practice and methods such as by implementing strategies to deal with pollution, waste management, etc.

Foundation Subjects:

- Maths
- Physics
- Drawing
- Social Science

Basic Education Requirement: Bachelor's Degree in Civil Engineering

Carpenter

Carpenters are skilled craftsmen and women who create or adjust wooden objects and structures. In the construction industry, carpenters can work on different project sites from building homes and offices to bridges and roads. They need to start by reading and analyzing technical drawings or blueprints to understand the layouts and details of building plans and determine what they need to construct.

Their expertise in constructing wooden frames is fundamental to support building structures and ensure sustainability in each construction. This is why they need both training and physical practice to excel in making objects such as wardrobes, cabinets, chairs, and beds or structures such as houses or boats important and necessary for everyday use. In doing so, they need to be detail-oriented to be able to perform fine, intricate work accurately.

A carpenter may work independently or in teams based on the project contracts, but prefers little supervision as it is important that they make decisions and try out designs on their own.

Main Roles and Responsibilities:

- Make precise measurements of sizes and distances, calculate quantities and angles, triangulation, etc., before/while cutting or shaping wood, plastic or other materials.
- When facing unexpected situations or errors, carpenters need to think and come up with solutions quickly and accurately. They need to use logic to foresee problems/challenges in order to ensure effective time and budget management in a project.
- Communicate with clients and arrange what amount and type of materials and fitting plans according to the clients and building needs.

Foundation Subjects:

- Mathematics (Arithmetic, Algebra, Geometry)
- Drawing
- Physics
- Social Science

Basic Education Requirement: Lower Secondary Education + Technical and Vocational Education and Training (TVET) - Carpentry Training / Apprenticeship

Journalist

The primary function of this profession is to investigate different social issues, which can be to provide insights into global events that can have impacts on people's lives or to uncover crimes, political corruption or corporate wrongdoing, etc. In this process, journalists then collect, write, and present information they manage to obtain as news stories. The news can be presented through newspapers, radio, magazines, television, and the internet.

A journalist can work with general issues, but the majority tends to specialize in certain topics of their highest interest or expertise such as politics, crime, business, health, or sports, etc. Regarding work setting, some journalists may be employed under national/international news organizations, or work as freelance to write news stories to different clients.

Serving to bring the truth to the general public, journalists sometimes have to expose themselves to danger with their access to sensitive information, especially when investigating and reporting in countries where freedom of the press is limited. However, through their essential role of being the eyes for the public, the world's citizens are informed about what they need to know - important issues that can help them make the best possible decisions about their lives, their communities, societies, and governments.
Main Roles and Responsibilities:

- Educate the public in an accurate, well-rounded, and objective manner about national and/or international events and issues and how they can affect lives of the citizens.
- Collect information for each news story, which can be by interviewing expert sources/witnesses on the topic, researching public/private records for facts and statistics to support their stories, visiting the sites of where the focal event/issue takes place, and documenting what they see, etc.
- Present the information they have collected in written or spoken form as news stories, documentaries or featured articles.

Foundation Subjects:

- Khmer Literature
- History
- Sociology
- Social Science
- Computer Skills

- Foreign Language (English)

Basic Education Requirement: High School Diploma + Media Training (e.g. Cambodian Center for Independent Media)

General practitioner

A General Practitioner works in and for a particular community in public health facilities such as a referral hospital. He/she may also choose to work in provincial or major hospitals across the country.

In health care, general practitioners are primary-care physicians whom patients of all ages can go to for diagnoses, minor surgeries, and especially for treating ailments and chronic illnesses. They are the first contact when medical issues arise and consequently need to investigate in detail the type of illness and what treatment is needed. In case of serious diseases, they would need to refer those patients to the appropriate specialist for medical advice and for higher-complexity surgeries or treatments.

Having the option to work close to rural communities, general practitioners can provide great convenience and comfort to remote villagers who wouldn't need to travel long distances to be admitted to healthcare. General practitioners are able to help those in need with their ability to conduct life-saving surgeries/treatments and heal people to good health and well-being.

Main Roles and Responsibilities:

- Provide patients interpretations of symptoms in identifying a certain illness, and consultations on the following course of action for treatment and medication, etc.
- Conduct physical examinations on patients to confirm a diagnosis.
- Provide pre-hospital treatment, surgeries, and other emergency care.
- Advise community members of preventive medicine and healthy lifestyles.

Foundation Subjects:

- Biology
- Chemistry
- Physics
- Mathematics

- Foreign Language (e.g. English, French)

Basic Education Requirement: Bachelor of Medicine Bachelor of Surgery

Photographer

Taking pictures as a profession, a Photographer focuses on the art of making photographs with a digital or film camera.

Photographers can be employees of corporations such as newspaper/magazine companies, fashion publication or advertising agencies, who work full-time to take pictures for business websites and other promotional materials. However, many tend to work freelance, and can be hired by different clients for specific events such as weddings or graduations. Consequently, their social impact ranges from letting hosts and invitees refresh their memory of a private event to documenting historical, political or social milestones for the general public.

Depending on their specialization, some photographers work in studios, while others work outside, exploring and capturing nature, landscapes, places and things.
Main Roles and Responsibilities:

- Work with natural/artificial lighting or colors, and may also include different props to apply creativity and aesthetics when taking pictures of people, places and things.
- Choose their own subjects or materials that they want to take pictures of, and determine what beauty and style is for that setting.
- Have the pictures taken developed physically/digitally, usually after some editing of those pictures.

Foundation Subjects:

- Arts Education
- Chemistry
- Information and Communications Technology

Basic Education Requirement: Lower Secondary Education + Vocational Training - Photography

Clothes designer

A clothes designer makes clothing for men, women and children such as suits, trousers, dresses, and other types of clothes. The clothes designed by a professional can be practical and useful for daily activities on the one hand while they can be as extravagant as wedding dresses on the other hand. The process of making clothes can involve customization to best fit each client's preferences and physique, which requires the clothes designer's talent in translating the wants of customers by using yarns and fabrics and by applying design and aesthetics to clothing.

Clothes designers can work full-time alone or part of a team for a fashion/design house. There are also those who work freelance for their own business at home or a shop.
Main Roles and Responsibilities:

- Measure customers before getting to sewing to make sure the clothing will fit and help customers select fabric and colors for their clothes. The designer communicates consistently with clients throughout the process in order to make sure all components from concept and design to materials are used to satisfy the clients.
- Sketch designs on paper/computer or drape fabric on a mannequin using different tools such as chalks, scissors, pins, and sewing machines. In designing, they also work with a wide range of materials, colors, patterns, and styles.
- Conduct research on current fashion trends to understand consumer tastes. This sets the foundation to creating designs.

Foundation Subjects:

- Drawing
- Sewing and Textile
- Arts Education
- Mathematics (Arithmetic, Algebra)

Basic Education Requirement: High School Diploma AND/OR Vocational Training - Tailoring / Dress Making

Architect

An Architect's job is to plan, design, and review the construction of buildings for clients. He/she is responsible for the visual appearance of a building, focusing on the aesthetics and

functionality of entire structures. An architect also oversees the project and is accountable for the public safety of the construction. As construction methods become more and more sophisticated, an Architect needs to ensure that s/he is up to date and offers cost-efficient and environment-friendly solutions to costumers.

With a variety of roles, architects usually work in a multitude of workplaces. During the designing stage, they may work from their office while having meetings with clients in different settings. Once the construction starts, architects need to do frequent site visits to oversee the project.

Main Roles and Responsibilities:

- Design proposals, featuring their creative ideas and visions of the clients on the structure and use of space, etc.
- Produce detailed drawings from the design and test the feasibility of the design with technology from a computer software.
- Translate the design into instructions and technical specifications for contractors and construction experts.
- Consult with engineers, construction surveyors, and other specialists about the design to ensure aspects such as structural supports and energy efficiency components e.g. ventilation system and natural lighting.

Foundation Subjects:

- Physics
- Mathematics (Algebra, Calculus, Geometry)
- Drawing
- Information and Communications Technology

Basic Education Requirement: Bachelor of Architecture

Tour guide

A Tour Guide provides information and assistance to international individual clients or groups of visitors or tourists at different travel destinations such as nature attractions, landmarks, religious/historic sites, museums or other scenic locations.

Often employed under travel companies, tour guides may offer to lead walking tours, bus tours, and also river tours on boats. With their knowledge and expertise on the history of

the target location, a tour guide normally provides interesting description and facts of the site - its history and its impacts on modern society, etc.
Main Roles and Responsibilities:

- Enlighten and engage the visitors with the site with the tour guide's knowledge of history and ability to interpret the cultural/natural heritage and provide answers to questions of interested visitors with ease
- Entertain the visitors
- Provide safety regulations and ensure that every visitor complies to the rules While also ensuring that the tour is as safe as possible for every member of the group tour.
- Plan, manage, and supervise itineraries, ensuring the program and its activities are adapted to the visitors' taste and are carried out according to schedule, arranging transportation between the traveling destinations, etc.

Foundation Subjects:

- Foreign Language (e.g. English, Chinese, Korean)
- History
- Social Sciences

Basic Education Requirement: Lower Secondary Education + Vocational Training (Post Grade 9)

Social worker (working with NGO)

A social worker chooses as his/her profession to help and empower other people or communities (usually the marginalized/disadvantaged) to enhance their well-being and promote social change, development, and cohesion.

The structure and administration of organized social work usually aims to develop the beneficiaries' knowledge, skills and ability to utilize their own, the community or government's resources. This is often by ensuring the marginalized people access to quality education, counseling, health care services, and so forth, thereby jointly developing perspectives and qualifications to improve their own life and contribute to inclusive and sustainable development.

Through addressing challenges of individuals and communities, social workers may work to tackle broader issues of human rights, poverty, unemployment, inequality, etc.
Main Roles and Responsibilities:

- Travel to rural areas or marginalized communities where the Social Workers engage and listen to the community/beneficiaries in meetings and discussions to negotiate and formulate an action plan as program/project to tackle those challenges to secure funding and support for the project to take place.
- Carry out the project implementation, with close engagement and counseling with the beneficiaries and the NGO to maintain the right direction.
- Monitor and evaluate by conducting on-going documentation of short-term and/or long-term goal attainment.

Foundation Subjects:

- Sociology
- Social Sciences
- Mathematics (Statistics)

Basic Education Requirement: High School Diploma + Social Welfare Services Training

Secondary-level teacher

Based in high schools (public/private), Secondary School Teachers help students of different age groups, typically from grades 7 - 12, to acquire knowledge, understanding and competence through teaching a particular subject of his/her expertise. The specialised subject can be academic, technical or vocational, which can be taught in a rotation of 3 - 6 classes per day and potentially to more than 100 students every day.

Through the educating process, a teacher is also integral in cultivating virtues, building a sense of moral framework and self-identity in students as they learn and grow into adulthood. Teaching can be a fulfilling career that can influence the future of young people and help prepare them into well-rounded individuals who can contribute to society.
Main Roles and Responsibilities:

- Share with students knowledge relevant to the focal subject in an understandable and interesting way
- Design lesson plans - guides which normally outline the objectives of what and how the students will learn/accomplish in a lesson, subject points to be covered, activities and learning materials to be used, etc.
- Grade students' examination papers, homework or assignments.

- Communicate with parents or guardians of the students of progress or challenges the students may have.

Foundation Subjects:

- Sociology
- Social Sciences
- Communication Skills
- (Depends on the focal subject one wishes to teach as featured in the National Curriculum, which can include Khmer Literature, Maths, Physics, Chemistry, Sociology, History, Geography, Foreign Language (English), etc.

Basic Education Requirement: Bachelor of Education

Chef (restaurant owner)

Working as a professional cook, a chef prepares, cooks, and presents food to customers, usually specialized in a particular cuisine such as Khmer, Thai, Indian or Japanese. A chef is responsible for defining her/his own responsibilities which can vary widely depending on range of tasks and the size of the restaurant. The following tasks are either carry out by the chef or need to be delegated: cooking, leading staff, bookkeeping, cleaning, advertising etc.

Two of these tasks are often performed by the chef her-/himself: cooking and leading staff. Being the head of the kitchen, he/she may innovatively develop recipes to improve the tastes or presentation of traditional dishes, or be adventurous to create new and unique dishes to produce the best possible food and put together an attractive menu that fit the customers' tastes. A chef also needs to be a leader who can supervise and delegate tasks to staff in the kitchen effectively in order to organize and achieve tasks as fast and efficient as possible to satisfy the client.

Main Roles and Responsibilities:

- Prepare, season, and decorate meals and dishes based on each customer's order.
- Work with multiple tasks, different ingredients for different dishes and various kitchen equipment
- Monitors and supervises the preparation and administration of cooking by other kitchen staff members.

- Ensure that the kitchen is well-organized and consists of a standardized level of hygiene to maintain food safety standards.

Foundation Subjects:

- Mathematics (Basic Numeracy Skills)
- Sociology
- Social Sciences

Basic Education Requirement: Lower Secondary Education + Vocational Training - Culinary

Real estate agent

Purchasing a piece of property such as a house can be an important decision to make and may involve a complex procedure to follow to get the task sorted. Therefore, people usually seek assistance from a Real Estate Agent, whose job is to help clients buy or sell properties such as houses, offices or plots of land for the best possible price and/or conditions.

A real estate agent can choose to work as a listing agent to help clients sell properties, or as a buyer's agent to help clients buy properties. With their knowledge on local property law and expertise to market properties, real estate agents act as the middleman between the two parties who wish to buy and sell properties. Once the buyer and the seller came to an agreement and accepted a bid, the agents can still be involved in supporting the clients with paperwork, ensuring communication between the two parties runs smoothly and providing feedback on inspections and moving.

The workplace may vary across time spent in an office and time spent to visit properties and have meetings with clients in different places. Real estate agents also work irregular hours, which can be during the day, in the evening or also on weekends.
Main Roles and Responsibilities:

- Conduct research to be informed of the local property market trend and competitive prices
- Look for properties that suit clients' needs.
- Negotiate on client's behalf for the most reasonable price or favorable terms.
- Attend conferences and/or seminars to stay up to date with current trends and network with property owners, potential clients, and other real estate agents.

Foundation Subjects:

- Mathematics (Arithmetic, Statistics)
- Sociology
- Social Sciences

Basic Education Requirement: High School Diploma

Sales manager

Usually employed at for-profit corporations, a sales manager leads and guides a team of sales staff to ensure effective sales processes and achievements. Sales management involves developing a sales plan which sets the strategy and identifies profit-based sales targets in order to achieve objectives through the sales of products and services in the organization. Their tasks often vary with the size of the organization they work for.

Sales managers listen and respond to customers' preferences to remain competitive and retain loyalty in the market. They also need to come up with new ideas to upgrade products and services to keep up to the evolving needs of consumers, to stay ahead and be able to expand the business's client base.

They play a key role contributing to the firm's success externally on the market but they also are a key player within the organization as a mentor and leader of employees in the sales team which are in constant exchange with the sales manager to improve their performance. Main Roles and Responsibilities:

- Monitor and analyze customer preferences to determine the focus of sales efforts.
- Promote sales by determining discounts, special pricing plans or other rewards to capture consumers' interests.
- Evaluate sales staff performance to plan and coordinate training programs for sales staff.
- Manage and resolve customer complaints regarding sales and service.

Foundation Subjects:

- Mathematics (Arithmetic, Algebra, Statistics)
- Sociology
- Social Sciences

- Psychology
- Foreign Languages (e.g. English, Chinese)

Basic Education Requirement: Bachelor's Degree in Sales of Marketing; Bachelor's Degree in Business

Receptionist

A Receptionist (sometimes referred to as administrative assistant) is someone who performs various administrative tasks, including answering telephones and giving information to the public and customers. The work is usually performed in the waiting area such as a lobby or front office desk of an organization or business.

Receptionists are often the first employee with whom the public or customer has contact. They are responsible for making a good first impression for the organization, which can affect the organization's success.
Main Roles and Responsibilities:

- Answer and forward telephone calls, obtain or send information or documents using a computer, mail, or a fax machine, and perform other administrative support tasks, such as keeping appointment calendars
- Greet walk-in customers and other visitors and escort them to specific destinations while contributing to the security of the office by helping to monitor visitors' access
- Copy, file, and maintain documents and records plus collect, sort, distribute, and prepare mail and courier deliveries.

Foundation Subjects:

- Sociology
- Social Sciences
- Foreign Languages (English, Chinese)

Basic Education Requirement: Lower Secondary Education + Vocational Training - Hospitality

Office administrator

An office administrator works to ensure smooth flow of day-to-day operation and procedures of an office or an organization by supporting and organizing the administrative system. This includes financial arrangement and billing, personnel support, information and document records management, and logistics.

Having a key role in running various administrative activities effectively and efficiently, office administrators often need to provide and inform structures to other employees to follow such as budget management, procurement, correspondence procedure, etc. Consequently, they are good in multitasking managing various types of tasks at the same time.
Main Roles and Responsibilities:

- Coordinate office activities by implementing, managing and maintaining filing and labeling system of different categories of information records or invoices to ensure any required information is found easily and quickly when needed.
- Supervise administrative staff and assist fellow employees with meetings, conferences and other work events by scheduling appropriate times, booking rooms, and arranging refreshments, etc.
- Keep stock of office supplies and order stationery, furniture, and other office equipment when needed.

Foundation Subjects:

- Khmer Literature
- Mathematics (Arithmatics, Statistics)
- Computer Skills (e.g. Word, Excel, Access)
- Foreign Languages (English)

Basic Education Requirement: High School Diploma

Software developer

Usually in a planned and structured process as discussed with clients, software developers have a keen interest in computer systems and the latest technology who write and maintain a chosen programming language (commonly known as a collection of code / source code) to carry information and implement a sequence of instructions which automate the performance of one or multiple tasks in a software. For example, a client can request to develop a program

which controls electricity supply during the night such that light in public spaces are shut off automatically during times when nobody is present.

A software developer may work as an employee for an organization or as a freelancer and their work facilitates digital effectiveness in our daily use in a range of fields such as Health care, Education, Economics, Business, etc. He/she often works as a team with a number of computer programmers to write and implement the source code and also to find and fix errors in the system in order make changes and ensure proper function of the software.
Main Roles and Responsibilities:

- Communicate with clients to analyze their needs in order to design develop software/applications according to their requirements.
- Work with the client to create a conceptual design, and then have the developer's team of computer programmers create the programming code in order to run the software.
- Once the final manifestation and internal system of the program/software has been built, the developer continues to maintain and update the program to ensure all security problems are fixed and is well-operated in the database.

Foundation Subjects:

- Computer Skills
- Mathematics (Calculus, Statistics)
- Physics
- Social Sciences
- Foreign Languages (English)

Basic Education Requirement: Bachelor's Degree in Software Engineering; Bachelor's Degree in Computer Science; Bachelor's Degree in Information Technology